SEPT. 5 1958

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

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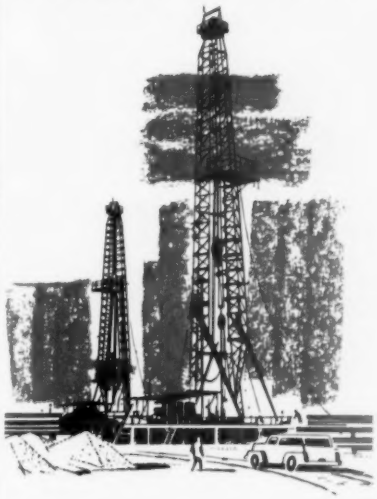

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Good Wells Make Good News

A Monthly Report of Successful Well Treatments

September 5, 1958

Acidizing, as well as fracturing, should be considered when planning a stimulation treatment. Acidizing may actually be the most profitable treatment for your well. Here are four recent examples of successful acidizing jobs by Dowell.

- **Crane County, West Texas.** (New Oil Well) This well was completed in the Silurian-Montoya dolomitic limestone (5110 to 5114 feet). It swabbed only 3 barrels of oil and then went dry. Operator ordered 500 gallons BDA* (Breakdown Acid) to prepare well for fracturing. *After treatment with BDA, well came in 110 bopd flowing—without fracturing.*

- **Southeastern Saskatchewan, Canada.** (Old Oil Well) This was completed in July 1957 in the Charles. Casing was perforated in four intervals between 4476 and 4510 feet. After initial acidizing, production rose to about 60 bopd but gradually decreased to 22 bopd. Dowell was called to treat the well with the retarded acid-action fluid used in Acid Petrofrac*. 5000 gallons fluid and 80 ball sealers were used. Treatment was down casing at 8 bpm. 20 ball sealers were injected after each of the first four 1000-gallon batches of fluid. Four days after treatment, *the well was pumping 55 bopd. The producer figured that the treatment cost of $3295 paid out in only 35 days.*

- **DeSoto Parish, North Louisiana.** (New Gas Well) Completed through perforations (6340 to 6350 feet) in the Pettit limestone, this well made a show, but no production. Dowell was called to acidize. First, 2000 gallons of acid containing demulsifying agent was used. Then 6000 gallons Dowell X Acid was pumped into well at 5.8 bpm, and displaced from tubing with water. *After clean-up well potentialed 52 mmcfd open flow.*

- **Russell County, Kansas.** (New Oil Well) This well was completed in the Kansas City limestone but produced less than 3 bopd. The producer ordered a treatment of 3000 gallons Retarded Acid spearheaded by 250 gallons BDA (Breakdown Acid). *After clean-up following treatment, well tested nearly 2000 bopd.*

Your zone pay may be a relatively insoluble sand or a fast-reacting limestone. In any case, acid may be your best buy. Let your Dowell engineer help you "tailor" an acid treatment for your well. In some cases the acid may be used to remove mud blocks. In others, it may increase the drainage area of the well or improve fracturing results. For service, call any of the 165 Dowell service points and offices. In Canada, contact Dowell of Canada, Ltd.; in Venezuela, contact United Oilwell Service. Or write Dowell, Tulsa 1, Oklahoma.

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60-Second Summary / WHAT'S HAPPENING IN OIL

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September 5, 1958

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Commercial airlines are going heavily for kerosine-type fuel for their upcoming jets. They claim it's safer and, for the present, cheaper than gasoline-type JP-4. But as demand grows, it could pose some new problems for refiners. . . . p. 13

•

Technical men can be valuable aids to marketing departments. Jersey Standard is finding just that with the use of experts to advise its worldwide affiliates. . . . p. 41

•

Hydrodynamics is being used as an exploration tool to locate traps. Changes in underground fluid pressures can help determine oil entrapment, proponents say. . . . p. 23

•

Watch for a flurry of suggested changes when the government releases its plan for revising imports controls. Although a majority in the industry appears agreeable to gearing imports to domestic refinery runs, there will be differences of opinion on just how this should be done. . . . p. 11

•

Demand for oil and gas for home heating will get a lift from an upswing in house building. New starts this year now are expected to total about 1.2-million, up nearly 200,000 over 1957. . . . p. 46

•

Supertankers are taking on a new role—handling one-product shipments. Such vessels were designed for crude movements, but the growth of some markets justifies their use in product service. . . . p. 38

•

Spain's proposed oil law has some bad features, some companies say. Private concessions will be small, the exploration period will be short, and the government company gets favored treatment on acreage. . . . p. 47

•

More drilling is expected for gas pays in the Morrow sand, underlying the Permian gas pay in the Hugoton area of southwestern Kansas and northwestern Oklahoma. . . . p. 26

•

Argentina could receive some early benefits from its recently-negotiated development contracts. One of the U.S. entries plans to start drilling in the near future in the Mendoza field. . . . p. 48

•

The search for the Edwards lime on the flank of the Pescadito dome in Southwest Texas is proving to be difficult. One operator is drilling below 19,000 ft. in a second try. . . . p. 19

Up to the Minute

SIGNIFICANT LATE NEWS

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September 5, 1958

Individual oil imports quotas probably will be cut (or raised) gradually when the new controls plan goes into effect. Some firms—those that now run a high percentage of foreign crude—will be permitted initially to import as much as 37.5% of their refinery runs. Others—who now use little or no foreign crude—will be permitted to import only 6% of their base-period refinery runs average. Later, the high percentages will be trimmed and the low ones increased until all will be permitted to import approximately 11% of refinery runs.

At midweek, the government was still working on details of the new plan, but hoped to be ready to make it public within a few days.

•

Radiation and radioactive isotopes loom large in refining's future. Dr. Willard F. Libby, of the Atomic Energy Commission, said this week that almost all refining operations can be duplicated through the use of radiation. Research has already revealed these uses: to crack crude, to inhibit gum formation in stored oil products, and to increase octane ratings.

Automatic control of petroleum refining by use of radioisotopes may become practical soon, Libby said. Other developments may be slower because of economic factors, but the possibilities are almost unlimited.

Esso Research scientists confirm that nuclear processing can be done now in commercial quantities (page 35). But they, too, note that more research is needed to decide which processes can compete on a dollar basis with conventional methods.

•

More products from inland Texas refineries will invade markets in the mid-U.S. by late fall. The invasion will be made possible with the completion about Nov. 1 of a 47-mi. pipeline, linking Wichita Falls with the Oklahoma-Mississippi River Products Line near Duncan, Okla. The new line, a 6⅝-in. common carrier system, will have an initial capacity of 10,000 b/d. It will be operated by River Pipeline Co., controlled by Cosden Petroleum Corp.

The marketing targets will extend from the Upper Midwest eastward to the Ohio Valley. Through the Oklahoma-Mississippi River line, the new line will have connections to the Great Lakes Pipe Line up through the Midwest and the Little Inch system of Texas Eastern Transmission.

Through connection at Wichita Falls with Trust Pipe Line system, the River Pipeline will serve Cosden's Big Spring, Hawley, and Col-Tex refineries. At Wichita Falls, it will serve the refineries of Continental Oil and American Petrofina.

•

Argentina's president, Arturo Frondizi, will visit Washington next January. His talks with Eisenhower and others on "Mutual problems" will include oil.

•

A new helium plant will be built in Oklahoma. The Interior Dept. said construction of the government plant would begin "as soon as possible."

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"None of us can forget that the future success of the oil industry certainly will depend on a continuation of combined effort on the part of contractors, producers, suppliers, manufacturers and service companies."

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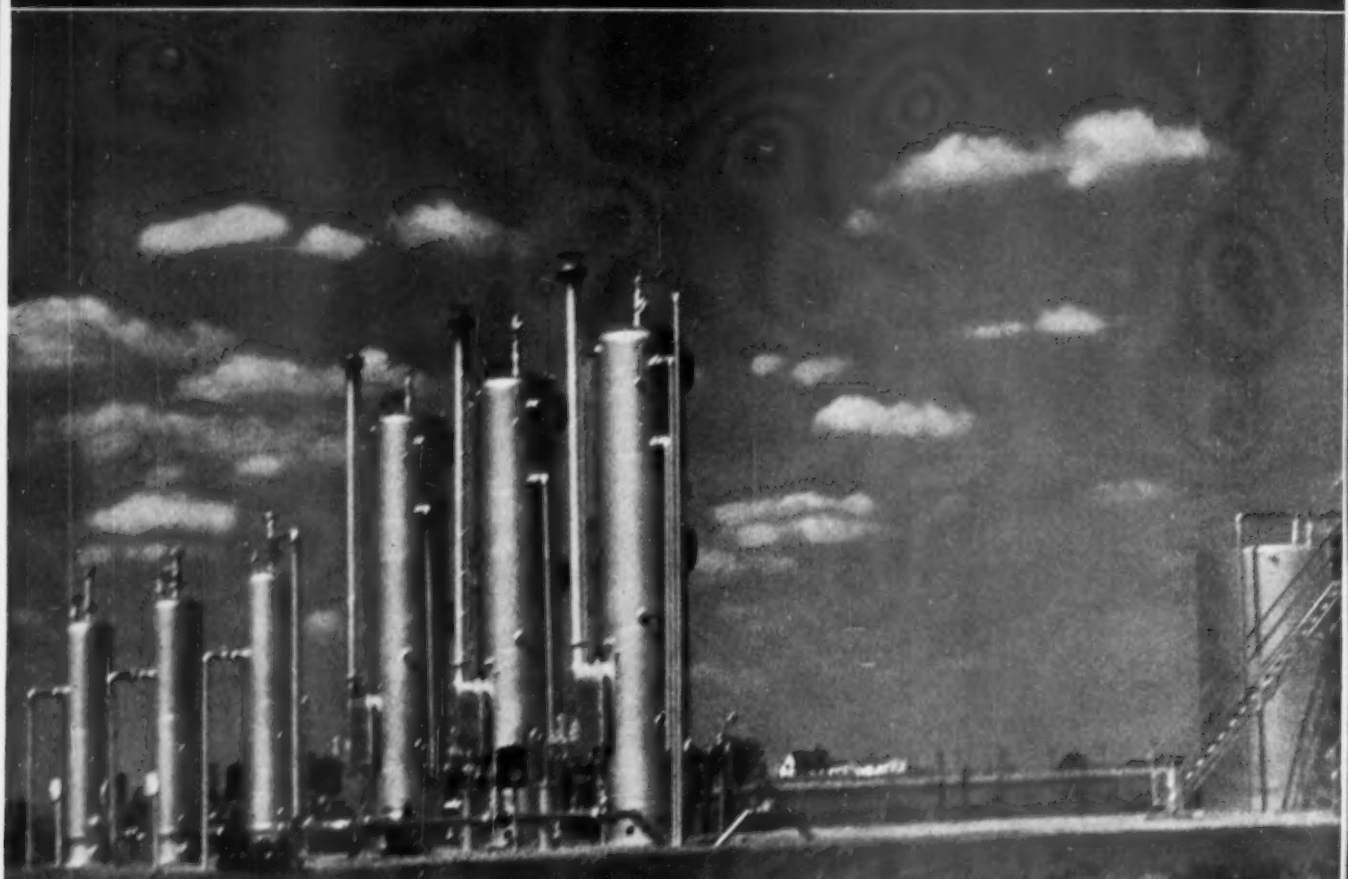

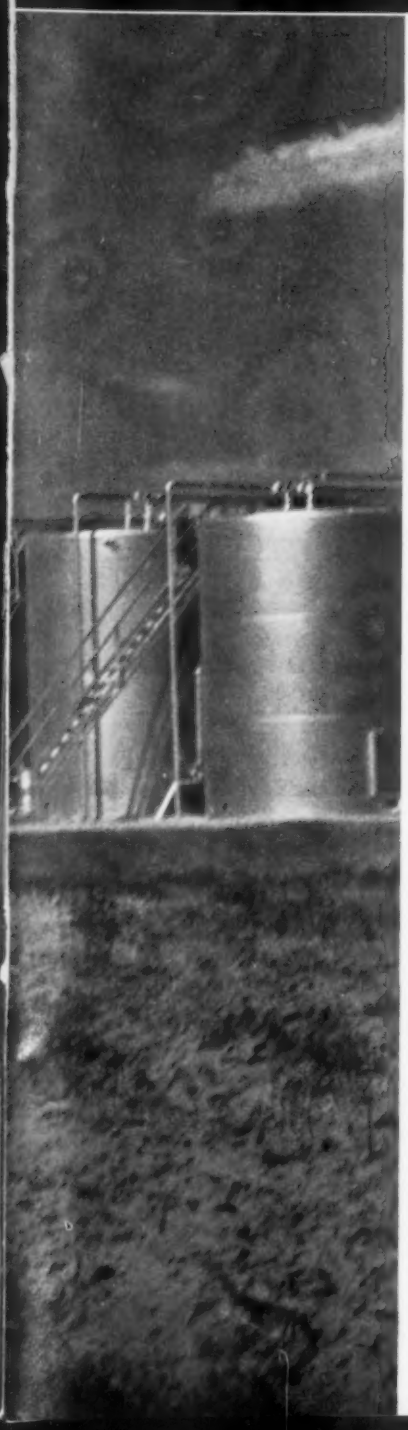

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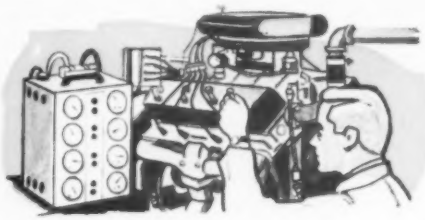
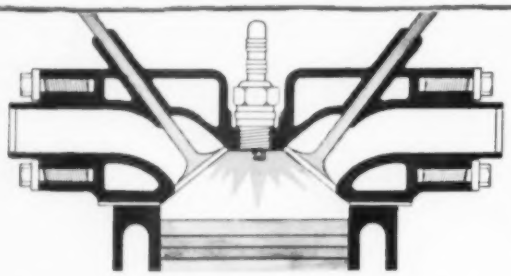
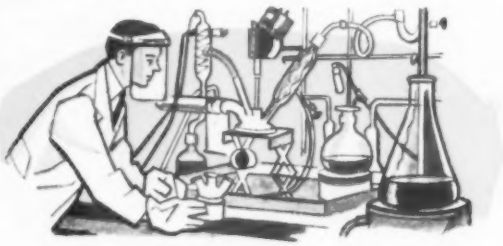


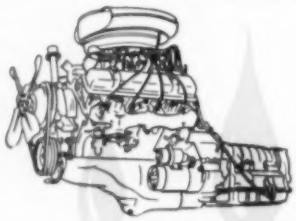
1. For more than 35 years, Ethyl's Research Laboratories have worked to match fuels and engines. This has been part of an overall objective to preserve a reasonable relationship between the advantages of high-compression engines and their octane requirements.



2. Research on basic combustion is a continuing and important project in our analysis of the fuel-engine relationship. Knowledge of combustion is vital in studying antiknock action, scavenging and deposit effects.



3. Allied to this effort is the quest for better antiknocks and for ways to improve the existing formulations. Our goal is to secure the best and most economical antiknock compounds for today's and tomorrow's fuels.



4. The development of new additives—other than antiknocks—is another facet of Ethyl research. These additives for fuels and lubricants help combat spark-plug fouling, lessen the effects of engine deposits, reduce engine wear and protect against oxidation.

5. Many cooperative projects at Ethyl are conducted with oil companies on their individual problems or for the benefit of the entire industry. Oil companies have a standing invitation to inspect Ethyl's laboratory facilities, and make use of its Research knowledge.

Research is an Ethyl service to the Oil Industry — typifying Ethyl's belief that service is just as important as product.

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PETROLEUM WEEK
September 5, 1958

New Imports Approach Gains Favor

With the present imports plan growing unwieldy, it appears that many in the oil industry are ready to try an approach geared to refinery runs.

The oil industry apparently would welcome a switch to refinery runs as a basis for controlling oil imports.

A PETROLEUM WEEK spot check of the various segments of the industry indicates that most oil men feel that the refinery-run approach would be a distinct improvement over the present method of individual quotas.

In making their comments, most of those interviewed pointed out that they were not expressing an opinion of a specific plan, but on the general idea of gearing imports to refinery runs.

The government is readying its new imports formula—based on refinery runs—but has not yet made details of the plan public (PW—Aug.29'58, p11).

When the proposed revision is published, the industry will be given a 30-day period in which to file its comments and requests for changes before a final plan is put into effect.

The government hopes to put the new program into operation Jan. 1. Until then, current quotas probably will remain unchanged.

Producers are hopeful that the new approach will be a more effective way of controlling the over-all imports level.

Their primary concern is with the results, rather than the method used. They have been critical of the operation of the present system, and fear that if it is continued the trend of imports will be constantly upward.

They note, for instance, that applications now pending for new quotas or increases in old ones would—if granted—more than double the total of permitted imports.

They hope that a switch to quotas based on refinery runs will provide a more stable pattern for imports.

Refiners, too, tend to feel that the refinery runs approach would be more equitable than the present method.

Under such a plan, a refiner would automatically become eligible for an imports quota, regardless of whether he had previously been an importer or not. And he would be on an equal footing, percentage-wise, with all other refiners in eligibility for foreign crude.

J. L. Sewell, president of Delhi-Taylor Oil Corp., said this week that he had received a preponderantly favorable response to a refinery runs plan he and some other refiners had drafted and had circulated in the industry. The plan apparently is similar in many respects to the one being considered by the government.

The program circulated by Sewell has now been sent to Matthew V. Carson, the imports administrator.

In Washington, a government official said he has heard "mostly favorable" comments about the government's tentative plan.

He said that even those companies who would be in line for a sharp cut tend to take the view that this would be better than another alternative: mandatory controls.

Although the government's approach is drawing generally favorable response, differences of industry opinion over details of such a plan are sure to crop up.

There is concern, for instance, over what period will be used as the base period, and whether each of the four districts east of the Rocky Mountains should be considered separately.

A Gulf Coast refiner, for example, voiced the opinion that Districts I and III require the most consideration because they have been affected most by crude imports, while Districts II and IV apparently haven't been hit hard.

And there is certain to be an effort made to get all petroleum products included in the revised program.

A proposal has already been made for a set-aside for small refiners. The argument in this case is that unless special attention is given this group, the imports quota each would get would be too small to be of any practical use.

And another refiner has made the suggestion that a refiner be required to process both domestic and foreign crude in order to be entitled to a quota. Otherwise, he said, there will be a traffic in swapping off or selling of quotas.

On the other hand, many refiners feel that some system of ticketing inter-selling between companies will be necessary if the new plan is to work satisfactorily.

(At present, the government's tentative plan would permit a company to trade or sell foreign crude only after it had imported the oil and had paid duty on it. Thus, a company could sell such imported crude but couldn't sell the "right" to import it.)

There seems little doubt that the new plan is likely to have a considerable impact on industry practices and patterns.

For instance, it may enable some coastal refiners to run a higher percentage of imported crude than they have in the past.

They would be able to do this if they are permitted to buy imported crude from some inland refiner who, under the new plan, would be eligible for a quota.

If the coastal refiner is thus able to use more foreign crude, then the domestic crude he has been using will be shifted to another market.

Some observers foresee the possibility that this would lead to a situation wherein tidewater refiners would operate principally on foreign crude while inland refiners would operate chiefly on domestic crude.

This would be made economically feasible, they say, because the inland refiner would be able to offset the lower price of foreign crude by his own sales of imported crude to the tidewater refineries.

If such a situation should evolve, it obviously would affect crude marketing and crude transportation patterns.

One obvious immediate effect of the new program would be a scramble for any unused quotas of imported crude. That is, an inland refiner who might not find it feasible to run imported crude, would probably find eager bidders for his quota. Such a competitive situation would tend to run the price up on such crude and could thereby narrow the gap between the cost of Middle East crude and domestic crude for domestic refiners.

Such a development would appear

to give the inland refiners an improved competitive situation. The "net" they would make on the sales of foreign crude would have the effect of reducing the cost to them of the domestic crude they would then purchase.

While the talk of the impending change in imports controls was going on this week, the government announced that crude imports in July were below total allocation.

Carson reported that the month's imports in Districts I-V averaged 829,400 b/d—104,700 b/d below the allocation of 934,100 b/d. It was the tenth successive month in which imports had dropped below the permissible total.

19 Affiliates Get New Manager

Kendavis Industries, Inc., International has been created as a management organization for 19 oil equipment, supply and service firms operating throughout the world.

Companies affiliated with the new organization are: Compania Pionera de Venezuela, C.A.; CP-Harrisburg, Inc.; Cummins Sales & Service, Inc.; Cummins Sales & Service de Venezuela, C.A.; Dorris Ballew, Inc.; Great Western Drilling Co.; Loffland Brothers Co.; Loffland Brothers Co. of Canada; Loffland Brothers Co. of Venezuela; Loffland Brothers de Venezuela, C.A.; Loffland Brothers de Caracas, C.A.; Loffland Brothers Co. of Peru; Mid-Continent Cummins Export Corp.; Mid-Continent Supply Co.; Mid-Continent Supply Co. of Venezuela, C.A.; Pioneer Well Services, Ltd.; Stratoflex, Inc.; Stratoflex of Canada, Inc.; and Unit Rig & Equipment Co.

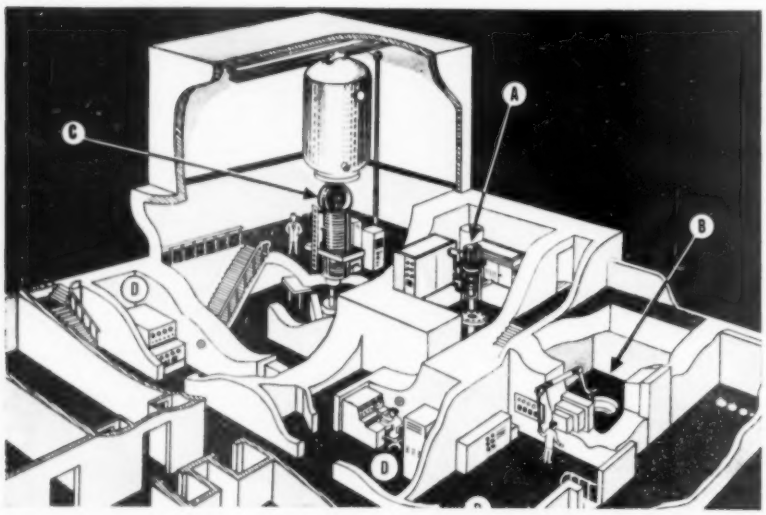
"This twentieth organization reflects the growth of our 19 various companies and was set up to permit more efficient, economical management, resulting in better service to our industries," according to Ken W. Davis, president of the new company.

Other officers of the organization, which is headquartered in Ft. Worth, are: Ken Davis, Jr., vice-president and comptroller, who is also chairman of Loffland Brothers Co. and of Unit Rig; Thomas N. Shults, general vice-president, who is president of Midcumport and vice-president of Mid-Continent; Victor LeMay, vice-president, communications, who serves as Mid-Continent public relations and advertising director.

Also John W. Tullis, vice-president, manufacturing, who is vice-president and general manager of Stratoflex; R. J. Bromell, vice-president, drilling, who is chief engineer of Great Western; P. Z. Hilliard, vice-president, merchandising, who is general division manager of Mid-Continent; Dan D. Rogers, vice-president, traffic, who is traffic manager of Mid-Continent;

Also Walter E. Strittmatter, vice-president, treasurer, and assistant secretary, who is assistant secretary of Mid-Continent; Jack P. Jones, vice-president, real estate, who is personnel and general office manager of Mid-Continent; Warren Scarborough, vice-president, legal counsel, a director of Mid-Continent; and B. L. Coontz, secretary and assistant treasurer, who is assistant secretary of Mid-Continent.

The advisory committee for Kendavis Industries consists of: D. H. Thornbury, president of Mid-Continent; M. C. Cornish, secretary-treasurer of Mid-Continent; R. C. Tucker, president of Great Western; R. W. Wire, president of Loffland Brothers; Dorris Ballew, president of Dorris Ballew; J. L. Vint, president of Unit Rig; J. T. Calnon, president of Cummins Sales & Service; C. A. Thomas, president of Stratoflex; L. J. Troutz, vice-president and general manager of Cummins Sales & Service de Venezuela; W. F. Ogden, vice-president and general manager of Loffland Brothers de Venezuela; and T. P. Tarwater, president of CP-Harrisburg.



At its new radiation research lab, primed with a shipment of cobalt-60 . . .

Texaco Trains Nuclear 'Guns' on Oil

The Texas Co. is all set to do some probing into the atomic structure of petroleum in the hopes of creating new or improved fuels, lubricants, and petrochemicals.

The company has just completed what it terms "the world's most fully-equipped industrial nuclear research laboratory and the first to use four basic radiation forces.

The new lab is in Texaco's research center at Beacon, N.Y.

The lab has received the largest single shipment of radioactive cobalt ever made to an industrial installation, the company said.

The cut-away drawing (above) illustrates the basic features of the new lab:

- (A) Multi-million volt linear accelerator—commonly called an electron gun because it is used in molecular bombardment.
- (B) The lab's "hot cell," which contains cobalt-60. The operator uses "master-slave" manipulators and watches the cobalt through a viewing window.
- (C) The 3-million volt Van de Graaff generator used to accelerate positive ions and to create neutrons. In the lab, it will be used to analyze and to detect impurities in fuels and lubricants.
- (D) Control rooms of respective installations.

Texaco does not know specifically what it will achieve with the lab, since it will be delving to a considerable extent into the unknown. But as an example of what has been done through research, the firm points out that polyethylene, a petroleum derivative, has been made more useful and versatile through exposure to irradiation.

What Fuel Will Commercial Jets Use?

Initially, at least, it is likely that the upcoming commercial jet airline fleets will use a kerosine-type fuel rather than the gasoline-type (JP-4).

Operating under the principle that "the customer is always right," the oil industry is gearing itself to supply commercial airlines with a kerosine-type of jet fuel.

That is becoming apparent as more airlines announce their selections for jet engine fuels. The initial bids to supply the airlines with fuel for their new jet aircraft have been coming in over several months.

The carriers had asked for bids on both a kerosine-type fuel—the type "A" classification of the American Society for Testing Materials—and the military JP-4 type.

And as more contract awards are announced, both domestic and international airlines are selecting kerosine-type jet fuels.

Last week, for example, American Airlines announced it had concluded contracts with nine oil companies for up to 4-billion gals. of kerosine-type jet fuel during the next 10 years.

Esso Standard Oil Co. and Shell Oil Co., according to American, will fill about 60% of its total requirements, with Esso alone supplying 34%. The other participants are Richfield Oil Corp. of California, Humble Oil & Refining Co., Gulf Oil Corp., Standard Oil Co. (Ohio), Standard Oil Co. (Ky.), The Texas Co., and Magnolia Petroleum Co.

The airlines, regardless of arguments to the contrary by some oil companies, are taking the position that a kerosine-type jet would be the most suitable fuel. They base their reasoning primarily on safety and taxes—or lack of taxes.

A kerosine-type fuel, the airlines have argued, would be safer than JP-4 for handling on the ground and also in the event of a crash. Their reasoning: kerosine has a lower volatility than JP-4.

The JP-4 fuel is primarily a cut from the gasoline boiling ranges (65%) but includes some kerosine boiling range fractions (35%). It is the primary jet fuel used by the U.S. Air Force.

While some oil company fuel experts discount the airlines' claims that kerosine is a safer fuel in the event of crashes, they can't argue against the current tax disadvantage of JP-4.

Kerosine-type jet fuels presently are not subject to federal taxes as are gasoline-type jet fuels, a situation which some oil companies believe may be changed in the near future.

Airlines now pay a net federal tax of 2¢ a gal. on gasoline fuels—which would include JP-4, if used. But while kerosine-type fuels currently aren't subject to federal taxes, one bill to include kerosine along with other engine fuels was introduced in the past session of Congress.

Some oil companies think that taxes on kerosine-type jet fuels may follow the pattern of taxes on diesel fuels. As soon as diesel fuel became in wide usage, federal taxes were added.

The arguments advanced by some oil companies for supplying a gasoline-type jet fuel for commercial airlines are based primarily on availability, which, of course, determines price in the long run.

Refiners say that the prices of JP-4 and kerosine-type jet fuels are about the same, the only advantage of kerosine is the lack of a tax.

But in the long run some refiners argue that JP-4 will become the less costly fuel to airlines.

That's due to the fact that:

The steady increases in octane requirements for automotive fuels result in a more-than-ample supply of low-octane naphthas which refiners had hoped would end up as airline gasoline-base jet fuel.

Kerosine, on the other hand, has been a product of declining demand —until the advent of jets—and refiners have no processes "to make" kerosine other than simple distillation to boil out the kerosine in crude.

And as demand for kerosine declined, and use of other middle distillates and gasoline expanded, the yield of kerosine from crude has been trimmed from more than 8% in 1925 to less than 4% currently.

Some refiners predict that when airline demand for kerosine-type jet fuels rises sharply in the 1960s, there could be a squeeze on supply.

It would mean, they say, that either the airlines would have to lower their specifications—as the railroads have done over the years on diesel fuel to keep price down—or face a higher price. Of, course, another alternative would be to turn to JP-4.

Originally, the airlines talked of a kerosine fuel with a minus 76F freezing point, the same as JP-4.

Now they've settled for a minus 40F freeze point on kerosine—the type that is generally available—for domestic use. For long-haul international use, some lines specify a minus 58F kerosine fuel, one that most refiners still can meet.

But some refiners say that should kerosine-type fuels have to be made in larger volumes, processes could be developed to make the material.

New Computer Speeds Oil Work

Now available to oil companies is a new electronic computer in the intermediate-price field—the IBM 7070. It provides considerably more speed and data storage for the money than earlier models.

It can be used by the oil industry for either accounting or scientific data processing applications, according to International Business Machines Corp., which announced the machine this week. Completely transistorized, the computer saves space and reduces by one-third the "installation and environmental control costs."

The 7070 increases speed greatly by overlapping machine operations. While computing, the 7070 can read or write magnetic tapes at a rate of 125,000 characters a second. And it can handle simultaneously several 400-card-a-minute readers and 250-card-a-minute punches.

Four files of 50 magnetic disks may be included in the system, giving random access storage of 24-million digits.

Typical of the machine's applications, which cover all segments of the industry, is high-speed prediction of the future performance of an oil well.

Other sample applications listed by IBM as targets for the computer's fast computing ability and large memory:

- Solving gasoline blending problems (on a larger scale and in one-fifth the time now required by the medium-sized IBM 650 machine).
- Pipeline scheduling.
- Forecasting market demand, deciding the best bulb plant locations, and possibly predicting the success or failure of service stations.

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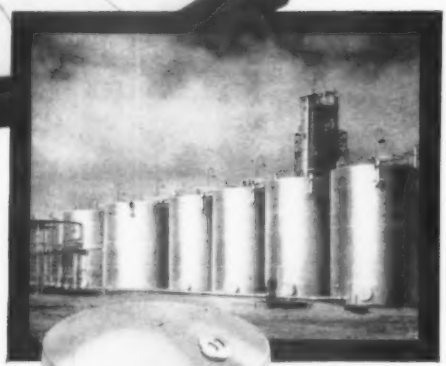

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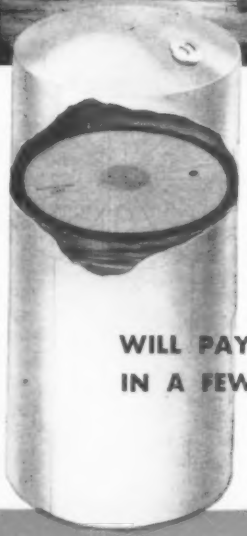

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Soind's Peake Dies in Scotland

Alonzo William Peake, former president of Standard Oil Co. (Ind.), died of acute leukemia last week in Dundee, Scotland. He was 68.

He had been on a grouse hunt with friends and business associates.

Peake, an industry pioneer, retired from Indiana Standard in 1955 after serving as president for 10 years. He was a director for 25 of the 34 years he was associated with the company. He had been living in San Francisco since his retirement.

He began his oil career as a $60-a-week roustabout after attending high school in Azusa, Calif. He worked his way through Stanford University as a waiter, cook, janitor, and draftsman, graduating in 1912 with a degree in geology and mining engineering.

He had been working for Midwest Refining Co. five years when the company was bought by Indiana Standard in 1921. Then, in 1928, Standard directors assigned Peake as president of Dixie Oil Co., a producing subsidiary in the South and Southwest.

Peake moved up to director and vice-president in charge of production, purchasing, and transportation for Standard's subsidiaries in 1930. His next big step—in 1945—was to the presidency of the parent company.

Peake also was a director of the Chicago Assn. of Commerce and Industry, the American Oil Co., the National Advisory Board of Junior Achievement, Continental Illinois National Bank & Trust Company, and the American Petroleum Institute. He also was a former trustee of Northwestern University.

What's New / IN THE INDUSTRY

Alaska has a big oil potential, but the expense of developing it will be big, too. This was pointed out in Anchorage during the weekend by Morgan Davis, president of Humble Oil & Refining Co. His reasoning: Operations in the far north involve a great deal more in preparation, equipment, and risk capital than is usually associated with exploratory ventures. He noted that before Humble spudded in its Alaska wildcat last fall, it had to barge 8,258 tons of cargo—made up of 13,000 items—from Seattle to the remote location in the Kanatak area of the Alaskan Peninsula. The cost of that one wildcat likely will be several times as great as the average cost ($585,000) of wells Humble drilled last year in off shore Louisiana, Davis said.

•

The injury rate in the oil industry has dropped to an all-time low. A Bureau of Mines report shows that in 1957 injuries occurred at the rate of 8.93 per million man-hours of work. The rate in 1956 was 9.32. There was also a 15% decrease in the severity rate of injuries—the number of days lost from injuries. Drilling, traditionally the industry's most dangerous work, showed an injury-rate decline from 51.92 in 1956 to 50.78 in 1957. Exploration, refining and marketing also had improved records, while marine transportation had more injuries than in previous years.

•

Sinclair is establishing a closer liaison with auto manufacturers. Its subsidiary, Sinclair Research Laboratories, Inc., has opened a research office in Detroit. The purpose: To keep abreast of automotive industry engineering and to study new engine developments as they relate to fuel and lubricants. The office will be headed by Walter G. Ainsley, who has been director of Sinclair engine laboratories.

•

Construction is about to start on a Texas-to-Florida natural gas pipeline. Houston Corp., having wrapped up final financing of the plan, said last week that work would begin "immediately." Completion target: June, 1959. The 1,500-mi. line will move 282 million cu. ft. of gas daily to the Florida market.

•

A bitter strike of more than 100 days has been ended at Aurora Gasoline Co.'s, Detroit refinery. In a meeting marred by fist fights and police action, the OCAW local voted, 153-122, to return to work. During the strike, sharp friction developed between the local and the union's headquarters.

The new contract calls for wage increases of 30¢ an hour, with a past bonus arrangement now being incorporated into the hourly rate scale. It is for three years, and provides for changes in grievance procedures.

•

Who is going to benefit from repeal of the 4.5% gross receipts tax on pipeline transportation? Attorneys for the Independent Refiners Assn. of America think Congress meant that the tax saving should be passed along to the shippers (page 40). But the general counsel for the Committee for Oil Pipe Lines argues that the tax cut should simply replace a rate increase the pipelines need because of increasing costs and declining revenues.

"Inside Slant" by LeRoy Menzing is not appearing this week because Editor Menzing has been on vacation.

Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
September 5, 1958

Washington is hearing some grumbling about the delay in granting new import allocations. The Interior Dept. has more than 75 pending applications from companies awaiting their first authorization to import crude oil into Districts I-IV. Many of the companies have been waiting several months for government action, and had expected hearings on their applications this month. Now, with the voluntary program being revised and imports frozen at their present levels until Jan. 1, reports are circulating that some discontented company might be tempted to jump the gun and start importing this year. Government officials believe the new plan promises quick action for all refiners, however, and are hopeful of avoiding any difficulties.

•

A new small business law may spur service station ownership by individual dealers. Congress has authorized the Small Business Administration to make direct loans to small firms, and some gasoline dealers are mapping plans to take advantage of the financial help. The National Congress of Petroleum Retailers has named a committee to help work out mechanics for the loans, at the suggestion of Philip Jehle, counsel of the Senate Small Business Committee. Jehle urged the dealer organization to "transform lessee-dealers into owner-operators."

•

The State Dept. is watching the upcoming Arab League meeting for clues on the Middle East's future. A political committee meeting starts Sept. 6, and an oil committee session is scheduled later. The U.S. expects Nasser to be under heavy pressure from other Arab leaders to help stabilize the Middle East economy.

•

Campaigning for the fall congressional elections soon will pick up speed. Sen. John J. Williams (R., Del.) has received the unanimous endorsement of the Delaware state GOP committee for renomination. Democrats don't expect to beat Williams, arch foe of the oil and gas depletion provision. If Williams is returned to the Senate, he will be the top Republican on the Senate Finance Committee. He would become chairman if a Republican majority takes over Congress during his term.

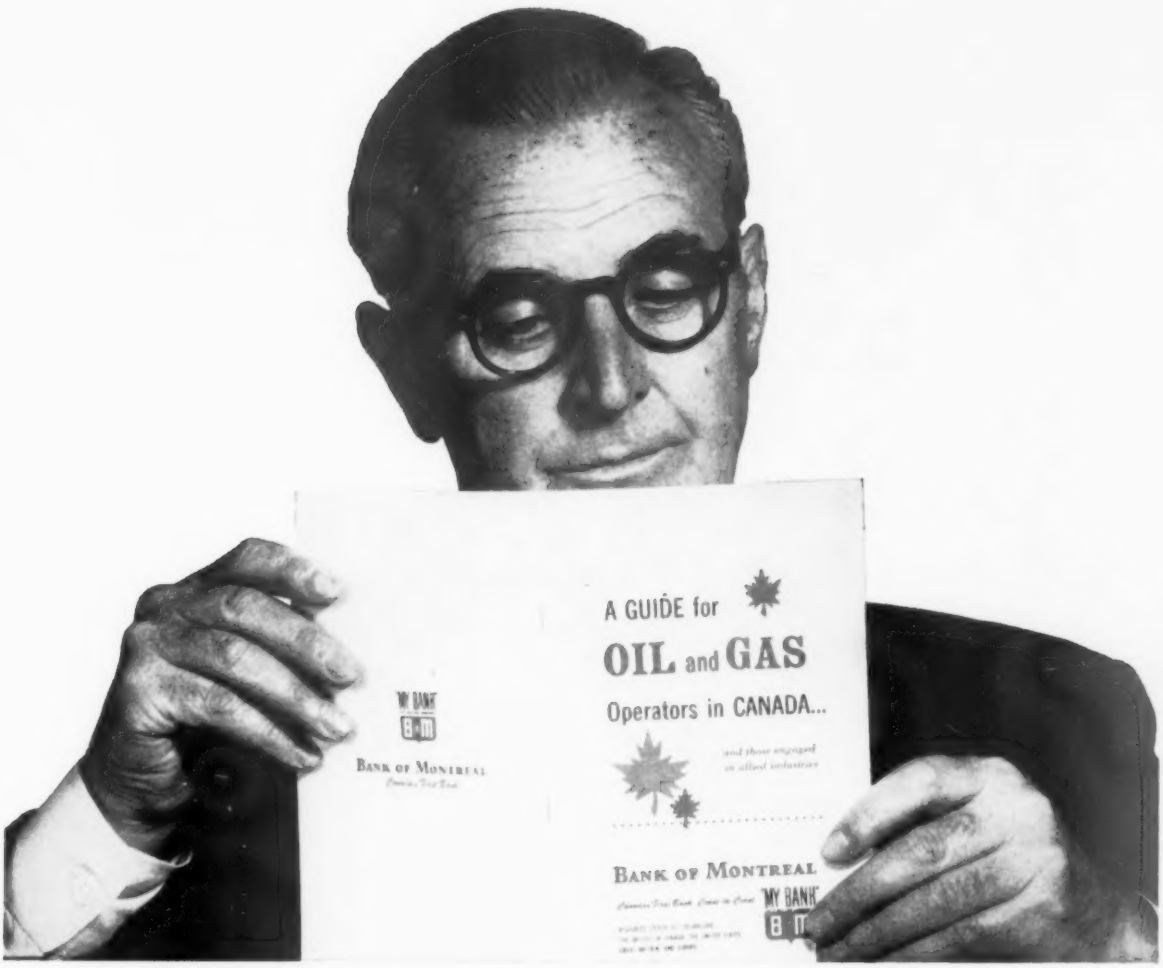
Sen. William Proxmire (D., Wis.) will use the depletion issue in his bid for a full term. He had been under pressure from leading newspapers in Wisconsin to attack depletion, and probably gained their support by his recent Senate effort to cut the depletion level.

•

There is little chance that Sen. Lyndon Johnson (D., Tex.), will give up the Senate Democratic leadership. Johnson is reported to be considering such a move, but his friends say he will stay on the job. If the Texan did decide to step down from the leadership, Sen. Mike Mansfield (D., Mont.), would be in line to succeed him.

•

The proposed ban on atomic tests won't affect any oil field use of nuclear devices. Government spokesmen say the ban would apply only to military tests.



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Second Edwards Deep Test Near Goal?

Ginther, Warren & Co. No. 1-A O. W. Killam continued last week to drive toward its objective—the Edwards formation—on the flank of the now well-known Pescadito Structure, a massive salt dome estimated to be 15 mi. long and 9 mi. wide, in Southwest Texas.

At last reports, the test, located in Webb County, 14 mi. northeast of Laredo, was drilling below 19,156 ft. on its way to a projected depth of 19,300 ft.

The operator has had to increase the projected depth three times in the search for the Edwards. Original plans called for drilling to 16,500 ft., or 500 ft. into the Edwards, whichever came first. As of last week, the deep test was drilling through the Kiamichi formation.

Then a lime—believed to be the Edwards—was hit. It now appears, however, that it was not the Edwards, because shale reappeared soon after.

A Ginther, Warren & Co. geologist says: "We're going to drill to 19,300 ft. and run a log to see what we have before deciding on whether to go deeper."

The test is the second effort to hit the Edwards on the dome.

The first test—No. 1 O. W. Killam, 7,800 ft. southeast—failed to reach this objective because it drilled into the salt (at 15,107 ft.) sooner than expected (PW—Sep.6'57,p27).

The Pescadito Structure is south of a line of fields that produce from the Edwards. These include Fashing, Atascosa County; San Miguel and Dilworth, McMullen County; and Washburn and Stuart City, LaSalle County. The closest Edwards production is at Stuart City, more than 30 mi. north.

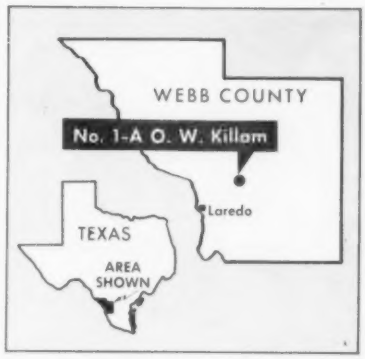
High temperatures and high pressures have dogged drilling efforts since March.

One recent Schlumberger electric log, run at about 18,800 ft., recorded a bottomhole temperature of 410F.

Flow temperature has risen to about 200F.

Such temperatures have caused several problems. Deviation surveying, for example, has been difficult because the heat scorched the films in the measuring tool.

And protector rubbers on the drill pipe have had to be changed every 10 days or so. Under more normal temperature conditions, the protectors hold up for six months to a year.



The test was spudded Dec. 14, 1957, and drilling proceeded normally to about 14,000 ft. At this point unexpected high pressure caused a blowout.

The operator estimates that the bottomhole pressure at the time of the blowout, which occurred Mar. 26, was 13,600 psi.

A 19.2-lb. mud was used to kill the well. But sidetracking was necessary to continue drilling.

Two and a half days were required to get the hole under control. It was then discovered that the drill pipe had stuck at 7,250 ft.

The bottom 500 ft. of drill pipe was cemented in preparation for perforating by Lane-Wells Co., one of the Dresser Industries. An attempt to run the perforating gun through the drill pipe failed because the mud used in killing the well was too heavy.

A 2⅜-in. string of tubing was run inside the drill pipe. The perforating gun was pumped through the tubing —with only a 1/16-in. clearance— under 4,800 lb. surface pressure.

The perforations were necessary so that the operator could determine whether the cement job had sealed off the high pressure zone. It was found that the zone was not sealed, and another cementing job was performed to make sure the zone was non-communicative to the top prior to the fishing job.

About 11,500 ft. of drill pipe were then recovered with the aid of equipment from Dia-Log Co., of Houston, and Houston Oil Field Material Co., Inc.

The remaining 2,500 ft. of drill pipe, drill collars, and the bit had to be left in the hole.

A 200-ft. cement plug—consisting of a 20.5-lb. slurry—was set above the fish. The slurry was a special mixture prepared by Halliburton Oil Well Cementing Co., which handled the cementing on the job.

The plug was dressed back to 11,400 ft., at which point the hole was sidetracked by means of a HOMCO retractable whipstock. The hole was drilled at 6-degree angle off vertical.

To counter a bad lost-returns zone, more than 6,000 ft. of 7⅝-in. liner was hung in the sidetracked hole.

The liner was set from 6,829 ft. to 13,192 ft.

Before the blowout, the operator had encountered lost circulation in some weak zone between 10,000 ft. and 11,000 ft.

A company engineer reports that more than 3,000 bbl. of 19.2-lb. mud was lost in the hole while the blowout was being brought under control.

"We knew we had to run the liner in order to protect the weak zone while we used the heavy mud to go through the blowout zone," the engineer points out.

Proceeding slowly, the operators took about 60 days to drill about 3,300 ft. of open hole below 13,192 ft.

While drilling through this zone, considerable trouble was encountered with calcareous shale, which is much like slate. This shale was sluffing off into the hole, causing difficulties in getting in and out of the hole.

It was at this point that the operator began using a diamond bit.

Upon reaching a depth of 16,536 ft. on July 19, a 5½-in. flush joint P-110 liner was set from 12,996 ft. to 16,536 ft.

The operator reports that some gas cutting of mud occurred while drilling through the blowout zone.

Between 14,000-16,500 ft., the hole was reamed after each 5 ft. of drilling so that the drill pipe wouldn't stick.

The reaming at every five feet was found necessary because of considerable trouble with pipe sticking in this interval.

"Sometimes it would take as long as 45 minutes to pull the first strand of drill pipe out of the hole," a company engineer says.

"It was taking us six hours to make a short trip from 16,000 ft. to 13,192 ft."

Even with this cautious progress, the drill pipe parted, necessitating a

delicate, but successful, recovery operation.

The tool joint became loose on Aug. 19 and the drill pipe parted 13,000 ft. down, leaving a 5,216-ft. fish in the hole.

The contractor — Dillard-Waltermire, Inc.—went into the hole with the thread end of the drill pipe open. The lower string of drill pipe was screwed to the fish to pull it out.

Despite the extremes of heat and pressure, the mud program has been considered highly successful.

The operator has had high praise for the sodium surfactant mud used on the test. "It has done a good job of withstanding the high temperatures," an engineer says.

Three Magcobar mud engineers, using a portable mud lab, have been on location to carry out the mud program. A Wilson experimental power chain-driven pump and an Oil Well Supply conventional gear-driven pump have been used.

A 17.8-lb. mud was used for the first 14,000 ft. of drilling, up to the time of the blowout.

After the 19.2-lb. mud was used to kill the well and liner set in the sidetracked hole to prevent lost returns, the operator used mud ranging in weight from 19.2 lb. to 19.5 lb. to drill through the blowout zone.

A 17.6-lb. mud was used after the 5½-in. liner was set between 12,996 ft. to 16,536 ft. to seal off the lower gas zone.

Another unusual aspect of the venture has been the use of a tapered drill string.

Three sizes of drill pipe have been used simultaneously. The top portion of the string consisted of 4½-in. pipe, followed by several strings of 3½-in. pipe and then a section of 2⅞-in. pipe made up with 2⅜-in. "slimhole" tool joints.

A 4 9/16-in. Hycalog diamond bit was attached to the bottom string to cut a 4⅝-in. hole.

The geological picture is still being evaluated.

The Queen City formation was found between 380-1,010 ft.; Carrizo between 1,010-3,162 ft.; Wilcox between 6,990-7,220 ft.; and the top of the Taylor at 7,220 ft.

A group of sands "that look awfully good" was found in the Taylor between 8,800-11,300 ft.

The Austin was hit at 13,950 ft.; the Eagle Ford at 15,633 ft.; the Buda at 16,203 ft.; the Del Rio at 16,333 ft.; the Georgetown at 16,454 ft.; and the Kiamichi at 17,940 ft.

Nine Schlumberger logs—electric, microlog, and sonic—have been run so far.

A company spokesman says that if the Edwards is not found, tests will be run of the Taylor sands.

The first test had some shows in the Wilcox, but the zone was considered too tight to produce. The Wilcox sands in the current test were faulted out, however, the spokesman adds.

Participants in the test are Ginther, Warren & Co., Gulf Oil Corp., Michel T. Halbouty, O. W. Killam, Kinney-Coastal Oil Co., and other individuals.

In addition to the Nos. 1 and 1-A O. W. Killam, these companies have drilled two other tests in the vicinity. One is the No. 1-B O. W. Killam, which was completed as a gas producer at 8,677 ft. The other is the No. 1-C O. W. Killam, which was completed as a gas well at 6,800 ft. Both gas wells are now shut in.

An inconclusive test was drilled a few years ago by Brewster-Bartle et al, about a mile northwest of the No. 1 O. W. Killam test. But this venture was abandoned at 13,704 ft. Nothing much more was done in the area until the present program began.

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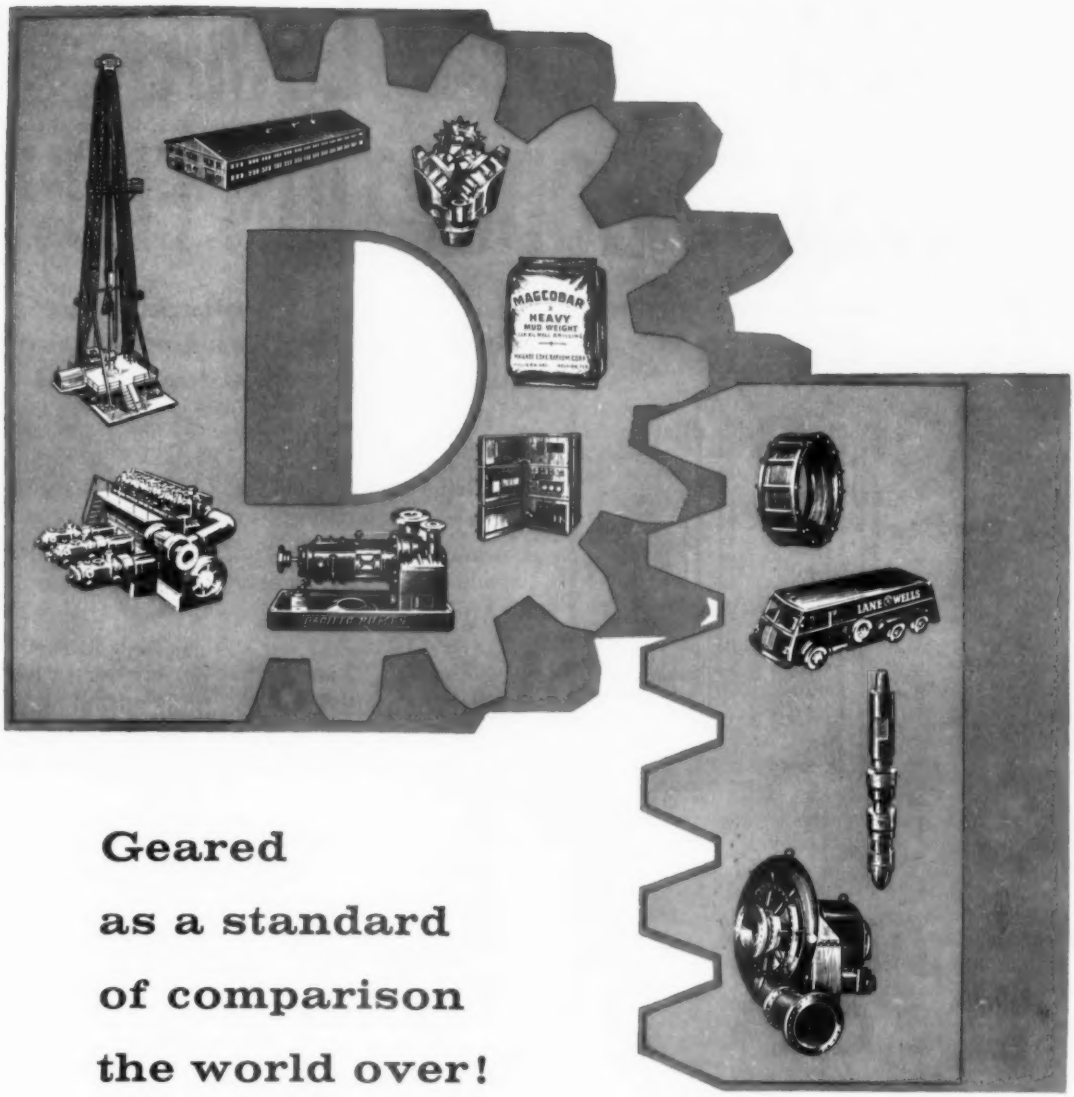

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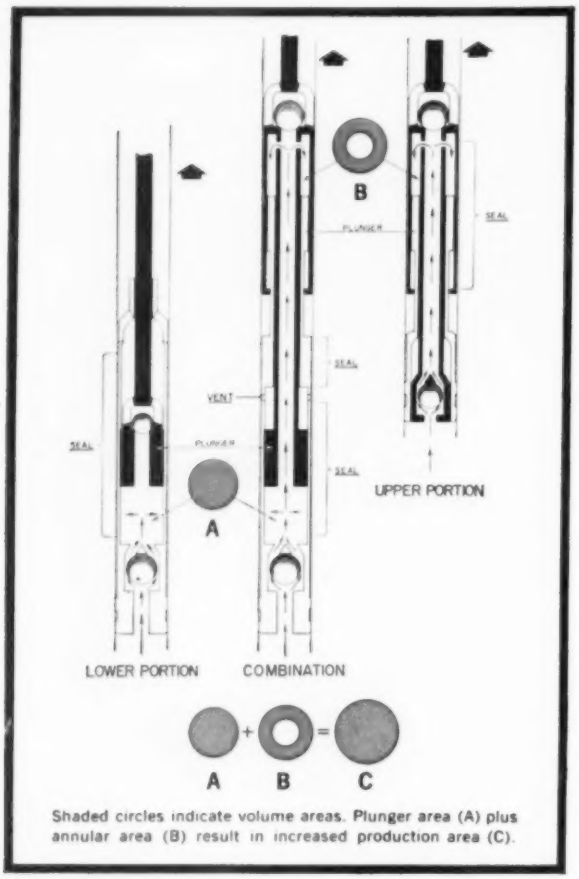
NEW AXELSON VOLUMAX INCREASES PRODUCTION FLOW



Shaded circles indicate volume areas. Plunger area (A) plus annular area (B) result in increased production area (C).

Axelson's new Volumax pumps will outperform any similar pump currently available for 2″ tubing.

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Lower portion plunger area (A), plus upper portion annulus area (B), combine to provide increased volume (C).

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Hydrodynamics Helps Find Oil Traps

Hydrodynamics—which deals with pressure of fluids in rocks—is being used by one exploration consulting service as a means of locating possible oil traps.

Hydrodynamic analysis is being carried out by Petroleum Research Corp., Denver. The company works on a contract basis with major companies in mapping exploration areas on the basis of reservoir fluid pressures.

Jack Knight, executive vice-president, describes the work this way: "We do fundamental chemical research on reservoir water, oil, and rocks. It's closely allied to geologics, but it's a separate and distinct system for determining fluid pressures in a basin."

Says Gilman A. Hill, president: "The techniques are so new that we are forming new concepts every day."

Petroleum Research Corp. uses hydrodynamics—in itself not a direct oil finder—to locate true traps where pronounced geologic evidence is absent.

Says Hill: "This is a practical oil exploration tool to be used by the day-to-day operating geologist. It differentiates between geologic anomalies, which are true traps, and those that are not capable of holding oil.

"Some of our physical-chemical findings have revealed new cause and effect relationships on the creation of hydrodynamic gradients, which control the entrapment of oil and gas even in the absence of pronounced structural or lithologic anomalies."

PRC feels that the transmission of pressures through and between sedimentary beds is the primary control as to whether a trap is capable of holding oil.

Previously, many geologists considered structure and changes in rock character as the only factors necessary for determining whether a permeability pinchout or truncation at an unconformity constitutes a true trap.

But PRC finds that changes in the fluid pressures are equally as important in defining oil entrapment.

Hydrodynamics is used by the company both in exploration work and in further delineating the subsurface in established oil-producing areas.

One main category of research is to delineate large areas where stratigraphic anomalies create oil traps—not necessarily on trend with currently producing areas.

The geological staffs of client companies are taught the broad, regional applications of hydrodynamics—how to recognize or determine favorable and unfavorable areas for trapping oil.

Other main categories of analysis are to guide further exploration in established oil areas by selecting the best specific prospects in those areas, and to interpret the possible commercial oil field development that may be indicated by oil shows or marginal or non-commercial wells.

Through analysis techniques, PRC helps clients in evaluating the true merits of specific structures and stratigraphic anomalies as oil prospects.

Potentiometric maps, compiled from many sources, are made of reservoir fluids in many areas. These maps, coordinated with others, help indicate where true traps may be found.

Information for the potentiometric maps is taken from initial field pressures, drillstem test pressures, chemical water analyses, electric logs, sample logs, and an extensive microfilm geology library.

All of the geological material for a given area is compiled, selectively screened for critical data, and transferred to specific types of maps.

Information from these maps is then converted into electric units equivalent in scale to the geologic counterparts. The electric analog values are then placed in an analog model developed by PRC to map the regional potentiometric surfaces. Pressure data from oil fields and wildcat drillstem tests are used to check the validity of the model.

The first objective is to help select structures that are the least vulnerable to having been flushed by hydrodynamic gradients. Pressure measurements are obtained from the first wildcat drilled in a specific area, and these are used to refine preliminary potentiometric maps, and to aid in determining areas most favorable hydrodynamically to oil exploration. Further geologic and hydrodynamic studies may then be concentrated in these areas.

Pressure information from the early wells in an area can be used to resolve a more accurate hydrodynamic evaluation of structures and stratigraphic traps, and can direct the exploration effort toward the more favorable trends.

Of the 67 people who staff Petroleum Research Corp., 45 work full time on hydrodynamics.

Personnel are comprised of geologists, physicists, mathematicians, petroleum engineers, and chemists. Several members of the staff devote their time to training clients' geologists in the application of hydrodynamics to oil exploration.

In Saskatchewan:

Activity and Accidents Drop

A drop in oil field accidents during the first half of this year has paid an added dividend in Saskatchewan: A threatened boost in workmen's compensation rates has been held up.

Since 1953, when the Saskatchewan division of the Canadian Petroleum Assn. helped to set up a Petroleum Industry Safety Assn., accident rates—and therefore compensation rates—edged downward. But the accident rate shot up in the latter six months of 1957, and a rise in rates was threatened, unless a drastic improvement took place.

A reason for the 1957 jump in accidents, says O. W. Valleau, chairman of the provincial Workmen's Compensation Board, was the boom in exploration and development that reached a peak in a relatively small area of southeastern Saskatchewan during the months of July through October, 1957.

One reason for the decreased accident rate is that activity in the province has simmered down from the 1957 high.

At one period last year, as many as 80 rigs were active. The wildcat discovery ratio was about 25%, and the development ratio at some fields was close to 100%.

So far this year, fewer than 40 rigs have been active.

"There's been a healthy shakedown going on," says Valleau. "The industry is thriving, but there is not the incentive there was a while ago. The wildcat success ratio has fallen off, and development is hindered somewhat by temporarily tight markets."

Another reason for the reduced

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rate is that the drop in activity has weeded out inexperienced crews.

One official of a service contracting company says the competition in recent months has cleared out "a number of companies that really had very little business being up here in the first place."

But companies with resources and a long-range stake in the industry in Western Canada have hung on—"and so have their crews."

Says Valleau: "There was such a frenzy to drill that companies were taking on many local lads with little experience. And there was also a fair amount of floating around from job to job. Some companies found it next to impossible to make their safety education programs stick."

Most companies have their own safety divisions carrying out safety programs. And the CPA has been active in distributing posters and bulletins on safety, as well as organizing speakers panels.

The 1957 boom—with the simultaneous boom in accidents—ran late into the year, so that companies had the increased problem of winter drilling.

Brittle metal, sluggish operation of machinery, high winds, sleet blizzards, and iced fingers and feet all contributed to the drilling hazards.

At that time of the year, the CPA redoubled its efforts. Most roads stayed open, and it was possible to keep in touch with more rig crews, and concentrate safety programs where they would do the most good —right in the small villages where most of the crews congregate after working hours.

If the accident rate rises again, rates will go up.

Valleau says the Workmen's Compensation Board took all factors into account in deciding not to boost levies. He warned the Petroleum Industry Safety Assn., at a recent meeting in Regina, however, that the improvement in the last six months was still not good enough. Compensation funds from this segment of the oil industry show a deficit of more than $300,000 at this time.

"Should the board find at the end of 1958, and upon further review, that the accident rate has become worse, the board might find it necessary to make a rate adjustment retroactive to January, 1958, or earlier."

For certain companies, this increase would cost plenty. Valleau had stated that unless the accident rate improved markedly, the July, 1958, review, (just completed), "would result in a drastic rate increase, with surcharges for companies with poor records."

ONLY SIKORSKY HELICOPTERS ARE FULLY PROVED IN HEAVY-PAYLOAD COMMERCIAL SERVICE

Only Sikorsky helicopters have thoroughly proved their versatility and reliability with years of commercial service carrying heavy loads.

Shuttling crewmen and supplies to offshore oil rigs, eliminating expensive and time-consuming road-building through jungles or mountains, or in countless other demanding jobs, Sikorsky S-58s and S-55s have speeded the operations of a number of vital industries.

Sikorsky helicopters have performed such varied tasks as pouring concrete from the air, placing heavy steel transmission towers into position . . . airlifting drilling rigs with personnel and supplies into jungle sites . . . or moving quantities of heavy machinery to factory rooftop operating positions.

If conventional transportation is inadequate where you want to operate, Sikorsky helicopters may provide the answers to your problems. They offer a unique and thoroughly proved capability to go wherever you need to go, carrying worthwhile payloads. Write for complete information.

Photo: *The British Petroleum Co., Ltd.*

JUNGLE DUTY—In remote areas Sikorskys offer unmatched versatility in serving many vital operations. In New Guinea, for example, 3 S-58s speed the search for oil by transporting drilling rigs, workmen, and all equipment and supplies.

POURING CONCRETE—A Sikorsky S-58 prepares to pour a 2700-lb. load of ready-mixed concrete for tower footings for a high-voltage line in California. The S-58 saved time and costly road building by also flying steel towers into position at the inaccessible sites.

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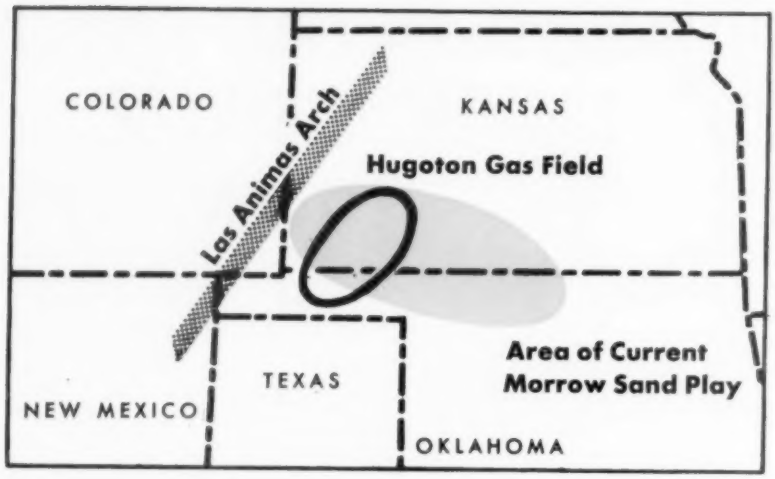

Hugoton Area Gets Morrow Play

Watch for more random drilling in the big Hugoton area of southwestern Kansas in the coming months, particularly along the Morrow sand trend stretching down into northwestern Oklahoma.

This is the opinion, at least, of several Mid-Continent geologists who are working this old gas area. Their opinion is backed up by a strong wave of activity in the past few months, with both gas and oil being found in the Morrow.

The big push is to find deeper, prolific gas pays in the Morrow, which underlies the shallow gas-producing Permian pay in the Hugoton region.

The search for additional gas is of significance, say geologists, because the Hugoton is already considered to be one of the largest natural-gas fields, with reserves estimated at more than 30-trillion cu. ft. But most of the gas comes from shallow pays, and geologists believe that a great deal remains to be found by drilling deeper.

The area getting the most play is in the western end of the Anadarko basin.

No Morrow sands lie on top of the Amarillo uplift, because the formation pinches out south against both it and the Las Animas arch to the west, say geologists.

As the Morrow sand, starting roughly in Beaver County, Okla., extends eastward, it gets deeper. A number of significant oil and gas discoveries have been made along this trend.

"Most of the Morrow sands are erratic and lenticular, making our drilling quite hazardous," says one operator. "But good wells are being found regularly, making up to 100-million cu. ft. of gas per day. All Morrow sand gas contains a good quantity of distillate."

One geologist says: "There will be a lot of random drilling for years to come, because the Morrow is present throughout the whole region, covering many thousands of square miles."

In the whole area, expiring leases are giving an added push to drilling activity.

Many operators say that they are drilling more heavily in the Hugoton region "to protect leases that would otherwise expire without a test for either oil or gas."

And, says a company geologist, "We've looked at the deeper beds in the Hugoton region, and have recognized for some time that they hold possibilities for both oil and gas."

Due to its erratic nature, the Morrow sand has chalked up a poor success ratio, compared with the "almost sure shot" of a test in the Hugoton field itself.

Some wells drilled to the Morrow have gone from 6,000 ft. to 13,000 ft. in the area and have been dry. This compares with shallow Permian production at about 3,000 ft. in the Hugoton gas field. "There have been very few dry holes in Hugoton itself, but we can't say the same thing when we hunt the deeper, erratic Morrow," says a geologist.

And drilling isn't cheap. Many operators are in on many deals in the region, which is "checkerboarded."

Some of the operations in the Hugoton area are fairly extensive, however. Cities Service Oil Co., for example, now has about 600 wells in the region, both in the Hugoton field and in the active area around it. Each well is on 640-acre spacing. Sinclair Oil & Gas Co. is also a large operator.

Weather Blocks Far North Work

Once again, the vagaries of Canadian weather have played havoc with well-laid plans: Shell Oil Co. of Canada's attempt to crack the muskeg barrier in the summer has been shelved—at least for a while (PW—Jul.11'58,p43).

Shell swung its plans into operation last January, hoping to be the first company to bypass the spongy muskeg that normally holds heavy drilling activity in the far north to a few winter months. Reward for success was substantial: an estimated 30% slice off winter drilling costs.

Shell's plans to barge a heavy rig to the Liard River region, in the Northwest Territories, were stopped by low water in the river.

Rented barges, loaded with 3,400 tons of drilling equipment and supplies, failed to clear a series of rapids 9 mi. in length. These barred the way to the test site only another 20 mi. distant.

Shell's plan was to collect equipment and supplies at key points. Then, in what would amount to a split-second timing operation, Shell wanted to rush the material on barges across the river rapids in early June—just after the ice break-up, but before the water level resulting from the spring runoff had dropped.

With perfect timing, the equipment could then be trucked and skidded to the drilling site, before the muskeg started heaving underfoot.

Everything went according to plan, except the weather. "The vagaries of nature upset our entire project," says Shell's automotive superintendent John Stuart. "The Liard River, for the first time in many seasons, failed to rise high enough for the bigger barges to clear the rocks."

In the muskeg world of Canada's north, the lack of all-weather transportation routes poses a major problem.

There are only two main roads into the general area. There are no connecting roads, and transportation depends on waterways in the summer and the frozen muskeg in the winter. Transportation rates per ton-mile are double or triple those in more accessible areas.

Shell intends to try its far-north project again next spring. When it does, only the rig will have to be barged in. Although the 1,200-ton rig had to be left at Hay River on Great Slave Lake, other equipment was maneuvered through the rapids.

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- Assures acceptance by the pipeline companies for Adomite-treated lease crudes.

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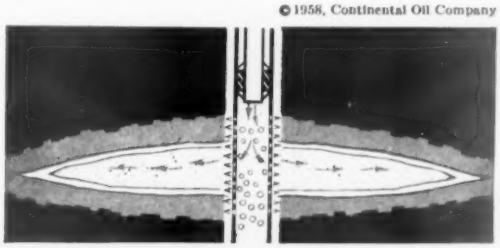

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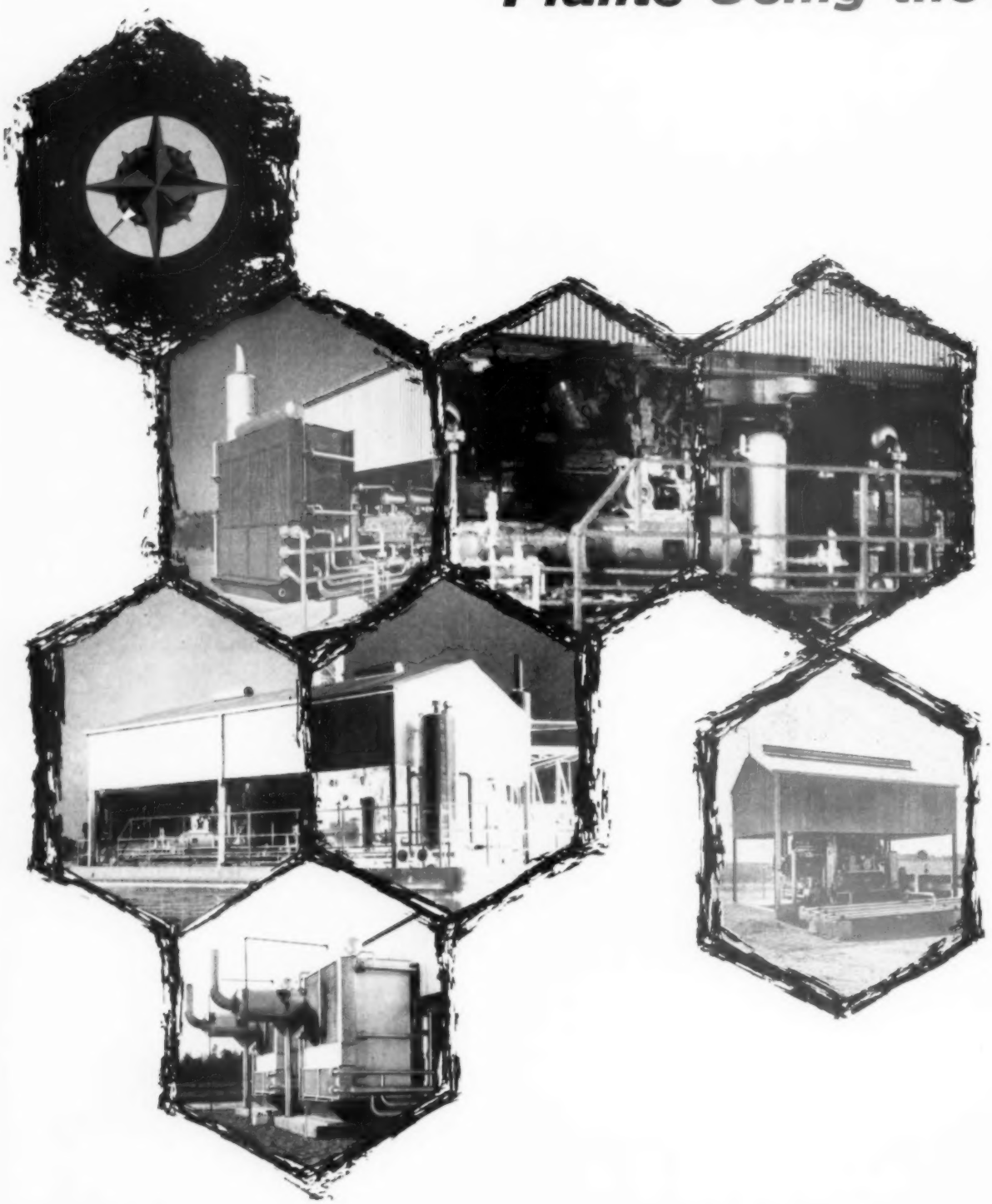

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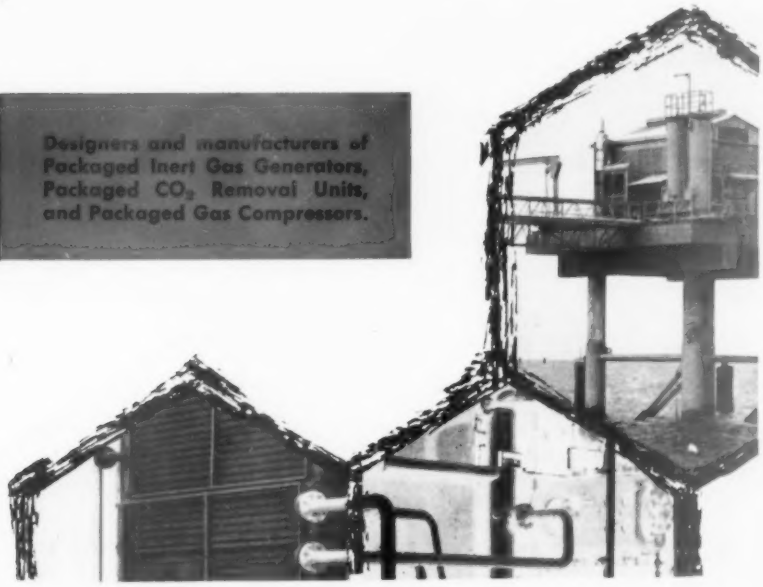


What's New / IN EXPLORATION, DRILLING, PRODUCTION

Production-Related Taxes Under Fire in Wyoming

A court action and a proposed bill —both involving tax assessments— are being watched closely by the oil producing industry in Wyoming.

The second suit challenging the authority of the state Board of Equalization to charge transportation costs in the assessment of oil production has been filed in the state Supreme Court by J. Ray McDermott, Inc.

McDermott, operator of the Ash Creek field, Sheridan County, asked for a $9,167 refund on his 1958 taxes, claiming that the assessment erroneously included the charge of transporting the oil by truck.

McDermott's first suit, still pending in the Supreme Court, was considered by oil operators as a test case on the assessment problem. Under Wyoming law, oil producers pay an ad valorem tax based on the valuation of the previous year's production.

Legislation to tax oil and mineral rights also has been proposed by the Wyoming Farm Bureau Federation.

The bureau pointed out that the state has not taxed on rights unless there is production. It proposes that holders of these rights pay a share of the ad valorem taxes now paid by the surface right holder. The organization says it does not want to increase property taxes, but rather to divide them between surface and mineral rights holders.

A bill including this proposal will be submitted by the bureau to the 1959 state legislature.

•

Properties Change Hands

W. B. Cleary, Inc., Oklahoma City, has purchased all the stock of Montin-Benson Corp.

Included in the purchase are interests in 22 wells in Kansas, 14 wells in Oklahoma, 3 wells in New Mexico, and undeveloped acreage.

Houston independent Michel T. Halbouty has announced the formation of the Halbouty Alaska Oil Co., to be known as Halasko.

The new firm will manage approximately 1,250,000 acres of mineral lands in Alaska. First operations will begin next spring in either the Kenai or Porcupine basins. Holdings also include property in the Koyukuk, Nushagak, and Bethel basins, and on the Alaska Peninsula.

Western Decalta Petroleum, Ltd., has acquired 50% interest in nearly 1-million acres in the Mackenzie Basin of the Northwest Territories.

The acquisition increases the company's acreage in the Territories from 470,005 acres to 921,854 acres. Increased emphasis is being placed on exploration as a result of recent financing (PW—Aug.22'58,p24).

Pacific Power & Light Co. has purchased the electrical transmission lines and facilities at the Salt Creek oil field, Natrona County, Wyo.

Facilities were purchased from Pan American Petroleum Corp. and Shannon Gas & Electric Co.

Sunset International Petroleum Corp. has increased its interest in the Southwest Mt. Vernon field, Lincoln County, Okla., from 44% to 66%.

The company's holdings in the field now total 27 net wells on 1,500 net acres, producing about 255 b/d of oil and 5.5-million cu. ft. of gas per day.

•

The Texas Railroad Commission has approved a cooperative waterflood project for the Bomarton fields, Baylor County, North Texas.

The flood is designed to increase oil recovery by 1.6-million bbl.

One order approved a unitization plan for Oakland Corp. and others, covering 435 acres. Another order authorized waterflooding by Oakland of the Tannehill "A" and "C" units.

•

The Caddo Parish (La.) Levee Board has approved plans designed to prevent the annual flooding that shuts down production in the Pine Island field.

Plans call for extensive levee work along Twelve Mile Bayou. The bayou will be enlarged, and the levee raised 3 ft. or 4 ft. along a distance of 18 mi.

Bids for the project will be received next month by the state Dept. of Public Works.

•

The Dept. of the Interior has assumed jurisdiction of oil and gas deposits in a 502-acre tract that is part of the Naval Auxiliary Air Station at Chase Field, Beeville, Tex.

The switch in jurisdiction from the Dept. of the Navy to the Interior will permit the Bureau of Land Management to open the tract to competitive bidding for oil and gas leases so that offset wells can be drilled to prevent drainage into adjacent private lands.

•

The U.S. Geological Survey has approved the 6,315-acre Chicken Creek unit, Lincoln County, Wyo.

Amerada Petroleum Corp. is operator of the block, which consists mostly of federal acreage.

•

Pacific Petroleums, Ltd., has offered to exchange its shares, on a one for nine basis, for shares of Humber Oils, Ltd., Calgary.

Humber recently acquired a 50% interest in 53,000 sq. mi. of Great Barrier Reef, Australia.

•

'Slim-Hole' Drilling Co. has filed a petition of voluntary bankruptcy in the U.S. District Court at Houston.

The firm listed its assets at $305,493, and its liabilities at $403,868.

•

The Wyoming Oil & Gas Conservation Commission has approved an application by Pan American Petroleum Corp. to expand its pilot waterflood project in the Torchlight field, Big Horn County.

Pan American proposes to inject an additional 1,200 b/d of water into the Tensleep formation through a new injection well.

•

Work is under way on a $1-million network of asbestos-cement drainpipe to protect the water supply of Hobbs, N. M., from salt water from the Hobbs oil field.

Completion of the 34-mi. system has been scheduled tentatively for Jan. 1, 1959.

The project will remove salt water produced by the 278 wells now in the field, as well as any future wells. Salt water from the wells will be delivered

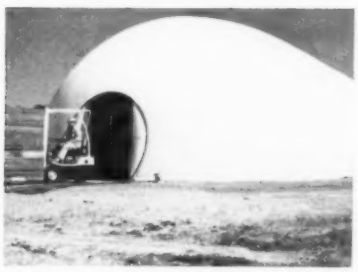
DU PONT *Petroleum Chemicals* NEWS

Number 91 in a Series of Bulletins for the Petroleum Industry

SEPTEMBER 1958

Additives double the life of diesel fuel filters in earth-moving equipment

Air-supported nylon warehouses solve storage problems for oil marketers



Low cost and easy portability are the chief advantages of air-supported warehouses like the one pictured here.

Such structures provide ideal storage shelter for petroleum products in drums, and TBA items. The cost can be as little as one-tenth that of the same-sized structure built of conventional materials. When deflated, the entire building can be transported in a station wagon. Only a couple of hours are required to erect the air-supported structure of average size. And the entire job can be done by two men.

Made from oil

Another important feature of the air-supported warehouse which is of particular interest to oil men is that it is made of petroleum-based nylon.

Nylon is a typical example of the many new products which the chemical industry is developing from petroleum. And the DuPont Company is one of the leaders in the development of oil-based chemical products.

CUT DOWNTIME IN HALF

Five recent months of field and laboratory tests put new light on filter performance in automotive diesel equipment.

The first field testing phase determined the "hours to plugging" of secondary filters in earth-movers operating on fuel which had *not* been treated with DuPont additives. These were the commonly used resin-impregnated paper filters with a porosity of approximately two microns . . . filters known to afford excellent protection for fuel-injection units.

FILTERS WERE CONTINUALLY CHECKED throughout the test. Paul Richard, DuPont representative and automotive specialist, is shown at left discussing filter-plugging problems with one of the diesel operators.

In the second phase, DuPont Fuel Oil Additive No. 2 (FOA-2) and DuPont Metal Deactivator (DMD) were added to the test fuel. *Filter life*, on the average, *was doubled*.

This means, of course, that only half as many filters were required, and that costly downtime for emergency servicing in the field, and filter replacement, was cut in half.

Insoluble residue reduced

FOA-2/DMD combinations reduce the amount of insoluble residue which nor-

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OVER

DUPONT *Petroleum Chemicals* NEWS

NEW MID-CONTINENT REGIONAL MANAGER

WILLIAM W. WINGATE has been promoted to manager of the DuPont Petroleum Chemicals Division's Mid-Continent region, with headquarters in Tulsa, Oklahoma.

He was formerly assistant manager of this region. Previously Bill had been active in regional sales and technical service work on all DuPont additives other than tetraethyl lead. This includes DuPont Metal Deactivator, lube and fuel oil additives, antioxidants, dyes and grease stabilizers.

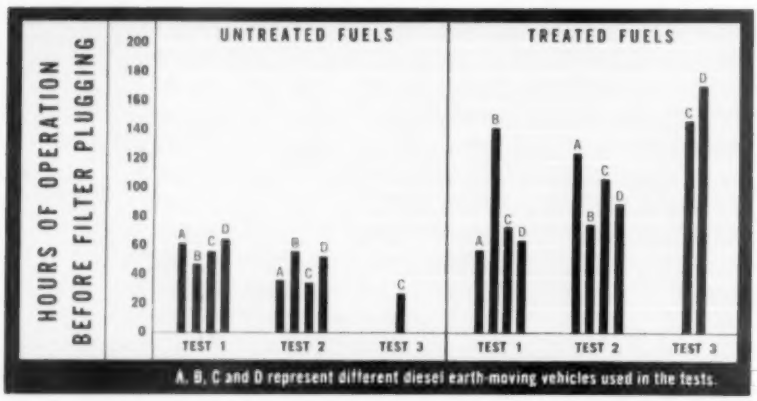
Bill Wingate had an early introduction to the oil industry doing gasoline and lube oil testing for a major oil company while earning his B.S. degree in chemical engineering at the University of Pennsylvania.

During World War II, Wingate was a lieutenant in the Navy and spent three years on submarine duty with the Pacific Fleet.

He is a member of Sigma Xi and Tau Beta Pi.

WILLIAM W. WINGATE

CONTINUED *Additives double filter life*



A, B, C and D represent different diesel earth-moving vehicles used in the tests.

mally forms in a fuel during storage or recirculation in an engine fuel system. FOA-2 acts also as a solubilizer and dispersant of sludge formations, and will prevent injector sticking and filter fouling. DMD retards the formation of copper mercaptide gel as well as combatting the adverse catalytic effect of copper-bearing metals in a system.

More flexible processing

By using FOA-2, you can balance stocks to meet varying market demands, because it stabilizes fuel during storage. You can stabilize cat-cracked distillates or blends with straight-run stocks. And you can improve residuals, too.

Test your own stocks

It's easy to test FOA-2 and DMD in your own stocks.

Samples and technical information are available from your DuPont Petroleum Chemicals Division technical representative. Contact him for further details.

Petroleum Lab being expanded

A large construction project, expansion of the product development and technical service facilities at the DuPont Petroleum Laboratory, is now under way. Completion is planned for mid-'59.

The project includes the addition of two new wings to the main laboratory building, to house new chemical and engineering apparatus for development and performance testing of chemical additives for petroleum products.

New facilities for the Petroleum Chemicals Division's Road Test Laboratory also are a part of the project.

New aluminum engine to test additive performance

Looking toward future trends in the automotive industry, the DuPont Petroleum Laboratory has installed an all-aluminum test engine to check performance of fuels and lubricants in lightweight power plants.

The new unit, a four-cylinder engine duplicating a companion test engine of conventional cast iron and steel, will provide comparative performance and combustion data for the petroleum and automotive industries. It will also assist in the laboratory's development of new products to meet lightweight engine requirements. The engine will be of particular value in analyzing the performance of refinery stocks that might be used in blending future fuels.

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In Canada—DuPont Company of Canada (1956) Limited, Petroleum Chemicals, 85 Eglinton Ave. East, **Toronto 12**—Ontario . . . HUdson 1-6461
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OVER

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A-7720

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into two deep input wells, which will inject water to a greater depth than the San Andres formation, the producing formation in the field.

About 8,000 b/d of salt water are produced. About 1,000 b/d of this originates from 120 wells inside the city limits.

It is estimated that the project will cost the producers, who will share the cost of the project, about $3,500 for each well currently producing.

•

The New Mexico Land Commission will hold a special land sale Sept. 18.

The commission will offer 40 tracts, totalling 14,281 acres in 15 counties.

•

A portion of Saskatchewan's Steelman field went into unit operation this week.

A 9 sq. mi. portion of the field will be operated as a unit by Imperial Oil, Ltd., British American Oil Co., Ltd., Canadian Superior Oil of California, Ltd., and Sun Oil Co.

A water injection program will be started, aimed at raising recoverable crude yield from 16% to above 50%. The project involves 72 producing wells.

•

Drilling Highlights

West Texas—Midwest Oil Corp. No. 1 C. T. Hunnicutt, section 420, block 97, H&TC survey, Borden County, was completed as an Ellenburger discovery for 121 b/d through 15/64-in. choke and perforations at 8,383-87 ft. Operator plans to complete dually with the established Strawn pay in the area.

In Hockley County, Honolulu Oil Corp. No. 1 Clyde Grissom, labor 14, league 24, McCulloch County school land survey, recovered 420 ft. of oil, 270 ft. of mud-cut oil, and 180 ft. of oil- and gas-cut mud on 4-hour drillstem test at 8,770-810 ft. in the Wolfcamp. The prospect is 2 mi. southwest of the 1-well McCulloch Clearfork pool and 3¾ mi. northeast of Wolfcamp production in the DLS multipay pool.

Kansas—Jackson, Shear & Parker No. 1 Bowles, section 24-4s-34w, Rawlins County, 20 mi. northeast of Phillips Petroleum Co.'s recent discovery in Sherman County, recovered 468 ft. of oil on 1-hour drillstem test of the lower Marmaton at 4,419-43 ft.

In Graham County, Murfin Drilling Co. No. 1-C Johnson, section 4-8s-23w, was completed for 125 b/d through perforations at 3,578-86 ft. in the Lansing-Kansas City. The discovery is 2 mi. north of Northeast Higer pool.

New Mexico—The Texas Co. No. 1 Perry-Federal, section 29-15s-30e, Chaves County, flowed 76 bbl. of oil in 105 minutes through ⅝-in. choke on 2¼-hour drillstem test at 11,033-60 ft. in the Devonian. The wildcat is 3 mi. southwest of the shallow Cedar Point field.

South Louisiana—Humble Oil & Refining Co. No. 1-B Lutcher-Moore Lumber Co., section 24-16s-15e, Terrebonne Parish, was completed for 1,022,000 cu. ft. of gas daily and 353.5 b/d of 42.9-gravity oil through ⅛-in. choke and perforations at 12,-166-74 ft. The pay opener is 3 mi. north of East Gibson field.

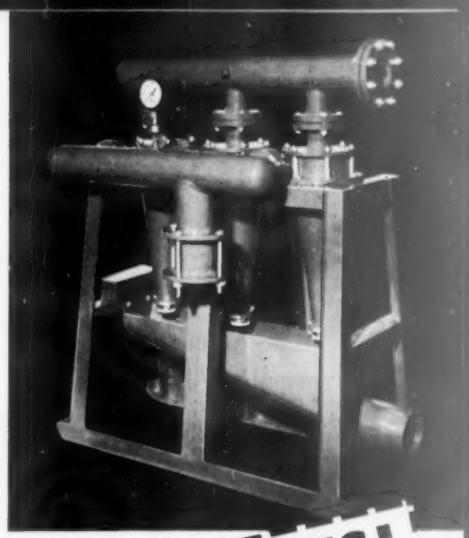
West Central Texas—Texas Pacific Coal & Oil Co. No. 1-A Ellen G. Stuart, section 84, block 4, T&PRR survey, Palo Pinto County, was completed as a lower Marble Falls discovery, flowing 145 b/d of 39.8-gravity oil through 17/64-in. choke and perforations at 3,512-28 ft. The discovery is located 1½ mi. north of an old shallow marginal producing area.

Arkansas—Horizon Oil Co. No. 1 Olin, section 9-17s-13w, Union County, Travis Peak pay opener in the old Wilmington field, was completed on the pump for 22 b/d of oil through perforations at 3,440-46 ft.

East Texas—Martin Shurin Jr. No. 1 T. O. Vogel Estate, Sarah English survey, Wood County, flowed 260 b/d of 45-gravity oil through 12/64-in. choke and perforations at 8,343-56 ft. The Rodessa pay discovery is ¼ mi. southwest of Paluxy sand production in the southwest end of Quitman multipay field.

Colorado—California Co. No. 2 Calco-Superior-Ute Tribal, section 15-33n-20w, Montezuma County, swabbed and flowed an estimated 114 b/d of oil and 81 b/d of load water through perforations at 5,761-838 ft. in the Upper Boundary Butte. The wildcat is located 8 mi. east of production in Utah.

Pennsylvania—New York State Natural Gas Corp. No. 1 Pennsylvania Dept. of Forests & Waters, Tract 65, Huston township, Clearfield County, was completed for 6.3-million cu. ft. of gas daily from the Oriskany at 7,320 ft. The wildcat is 4 mi. north of the Luthersburg gas field.



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D-X Sunray 'Plays It Safe' Around Acid

The most modern safety devices obtainable are installed on the new hydrofluoric acid alkylation unit and other new installations at D-X Sunray Oil Co.'s West Tulsa (Okla.) refinery to protect operators and other workers against gas and acid hazard.

There is a high degree of electronic instrumentation and control in the new alkylation unit (part of a $12-million expansion completed recently by Sunray at West Tulsa and Duncan). Nevertheless, the unit requires frequent attention.

Special nylon "zoot suit" coveralls, masks, baths and showers all serve to protect the workers in the area.

Oxygen masks and tanks are furnished for hazardous or potentially hazardous "breathing atmospheres." In the event a worker comes in contact with liquid or vapor acid, there are face baths, immersion tanks, and emergency showers within easy reach.

Safety of the employees is the company's "foremost thought," according to Harry A. Brown, Sunray's vice-president of manufacturing. "No installation is planned without every consideration being given to making the unit the safest possible."

What's New / IN PROCESSING

Nuclear radiation can now be used to process petroleum and chemicals commercially, but more research is needed to find processes most suited to such processing, according to spokesmen of Esso Research & Engineering Co. at the 1958 International Conference of Peaceful Uses of Atomic Energy at Geneva, Switzerland, this week.

The Esso Research scientists, Dr. F. T. Barr, H. H. Ogorzaly, and T. A. Reiter, said that radioactive cobalt-60 is commercially practical as a radiation supply in small-size processing units. Electron accelerators, however, can do the job more cheaply in intermediate-size processing units. A specially designed nuclear reactor provides the cheapest radiation of any source, but operates economically only in large capacities.

The use of radiation to produce changes in petroleum fractions may reduce the degree of pressure and temperature now necessary, augment or replace catalysts, and also improve quality.

American Gilsonite Co. has completed its first year of producing gasoline and coke from Gilsonite ore, with all processing phases successful, according to the company.

All phases of the project are operating in excess of design rates," says E. F. Goodner, president of American Gilsonite.

The refinery went on stream in August of 1957. It cost $16-million to build. Design capacities are a feed rate of 700 tons a day of Gilsonite ore —producing 275 tons a day of low-sulfur electrolytic coke, fuel oil burned by the power plant, and 1,300 b/d of high-octane gasoline.

•

Southland Co. will shut down its refinery near Yazoo, Miss. Market conditions in the oil industry are blamed by C. C. Else, general manager.

The 4,500 b/d skimming plant was the first in Mississippi and has been operating since 1950.

Regular gasoline will come back in style for at least one of the 1959 car models. Pontiac will have a 225-hp. "economy engine" delivering about 10% more mileage and using regular gasoline.

While this is the first announcement for a 1959 economy engine from one of the "big three" car makers, it is reported that another manufacturer will add an economy six to its V-8 line.

•

The nation's processing plants will have to accept a new concept of process instrumentation before they can achieve full advantages of computer control, says Nelson W. Hartz, head of the technical products division of Mine Safety Appliances Co.

"Today, an instrument system that simply measures and controls temperature, pressure, and flow is wholly inadequate for a plant that expects to take full advantage of the economies and quality improvements possible with electronic computer control," according to Hartz.

Computers are only as good as the data fed to them, and the results can be discouraging unless the computer is integrated with instruments capable of detecting fluid quality and composition variation.

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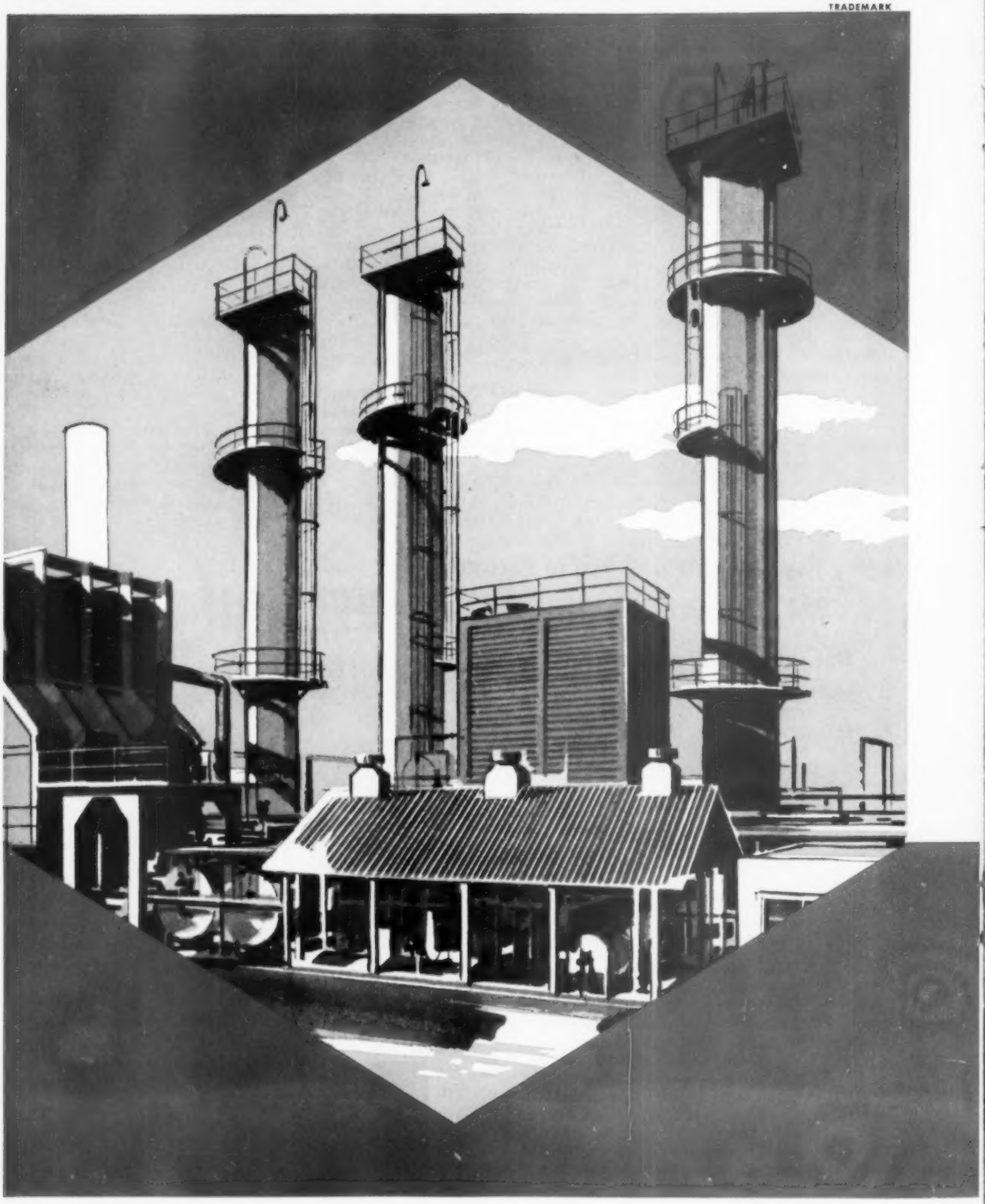

provides refiners a practical, economical way to achieve product quality

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Penex is the only commercial hydroisomerization process in operation. Here is how it works. Through the continuous catalytic isomerization of normal pentane and normal hexane in lower-value fuels, it produces a high octane isoparaffinic blending component. When blended with the fuel this component gives a finished product of higher octane value and superior combustion and carburetion qualities.

The Penex-produced finished product has high volatility, better burning qualities without plug-fouling and pre-ignition, better sensitivity and better lead susceptibility.. The Penex method of increasing octane number with isoparaffins results in overall better-balanced, more efficient fuel.

The Penex process is economical . . . in installation, in operation, in maintenance. Regeneration is not required, so capital investment cost is low, operation simplified and maintenance reduced. Catalyst and reaction products are non-corrosive, so lower-cost carbon steel construction can be used.

There are other economies, too. When Penex is used with a catalytic reforming process such as Platforming®, the make-up hydrogen is derived from the net high pressure separator gas. Hydrogen is consumed in insignificant quantities. This combination of processes also gives a considerable yield advantage at the same octane number.

Refiners interested in improving lower-value fuels, in octane number and efficiency, are invited to investigate thoroughly the application of PENEX to their operation.

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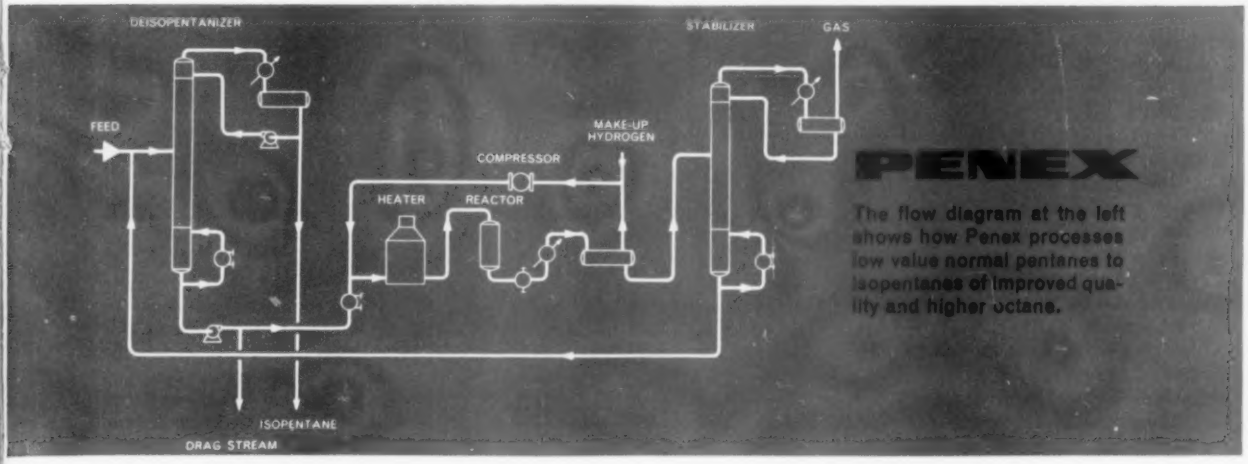

"Small Supertankers" Get a New Role

Product demand at the largest port-markets is now reaching a point where even 32,000-ton tankers can be used as profitable one-product carriers.

The evolution in tanker use goes on: Now a few very large markets are justifying use of supertankers up to the 32,000-ton class for one-product shipments.

This evolution in tanker function began with the first vessels designed to carry crude and products over water and will continue as long as tankers are used in the oil business—all the while spurred on by changing supply and demand patterns:

For a while, the 10,000-tonners were more than large enough to handle crude shipments. Then, replaced by the larger T-2s, they were shifted into coastwise product service. The T-2s, when they in turn were replaced as crude carriers by larger post-war vessels, followed the 10,000-tonners into product service.

And in recent years, it's proven economical to take supertankers as large as 38,000-tons out of crude service for use in product service—but only when used to carry more than a single product.

Now the one-product supertanker is beginning to make itself felt.

The latest case in point: A new terminal is on the way in New York harbor to handle 32,000-tonners delivering heating oil for the still-blossoming Long Island market.

Two Long Island heating oil distributors, Preferred Oil Co. and its affiliate, Burns Brothers Oil Co., now plan to build a supertanker terminal in the Astoria section of New York harbor, a good distance from all existing supertanker facilities in the harbor.

Preferred and Burns—along with the major that will supply them with heating oil—are figuring that the Long Island market now justifies supertanker-size shipments of the product and a 1.5-million bbl. terminal from which to distribute it. Eventually, the companies intend to expand the terminal storage to handle as much as 3-million bbl.

The Astoria terminal will have four berths, two for the supertankers and two for barges or smaller tankers.

Although a source close to the project told PETROLEUM WEEK that tankers will deliver their cargo by either of two routes—by coming up the East River or through Long Island Sound—it is expected that shipment through the Sound will be kept to a minimum. A 32,000-tonner would have to steer a mighty careful course for the length of the island if it were to avoid all of the sound's shallow-depth areas.

Depth, however, wouldn't be as much of a problem along the East River route.

Engineering work on the terminal has been completed, and the oil companies are taking bids on construction of the facility.

Although a good deal of dredging—and perhaps some rock removal—will be involved, it's expected that the terminal will be ready by September of next year.

Sinclair Oil Corp. also intends to use a supertanker in this one-product service soon.

Sinclair will soon put the S.S. Dyer, a 32,000-tonner, into a yard for cleaning preparatory to using the ship in one-product clean service between Houston and the large Eastern Seaboard markets.

There are drawbacks to using such sized tankers in coastwise one-product service, and they all add up to a less flexible operation.

The 32-tonner still can't be handled at a good many American ports, places where the old T-2 or its predecessors could move in and out without trouble. So the larger vessel can't be asked to make as many stops. But to handle the size of one-product cargoes now becoming necessary, the one-shot delivery by supertanker is far more economical than having several smaller vessels carry the load.

It is markets like the one for heating oil on Long Island, because of their growth and sheer size, that make supertanker use desirable.

Long Island, besides experiencing a better-than-average industrial growth, has had its heating oil business expand at a swift rate—mostly due to home construction. In 1950, with about 155,000 residential oil burners on the island, the heating oil demand was 2,328,900,000 gal. a year.

By last year, the island had 335,000 home oil burners and a demand of 5,025,000,000-gal. a year.

And with a new pickup in home building expected next spring, demand is expected to keep spiraling up.

Storage Tanks Float for 1,100 Miles

Milton, Pa., where these propane storage tanks were made by the American Car & Foundry division of ACF Industries, is about 2,300 mi. away from San Juan, Puerto Rico, where Tropical Gas Co. needed the tanks. So transportation was a problem. But American Car solved it by sending the 30,000-gal. tanks to Miami by rail and then hooking up this sea-tow to move the storage vessels the rest of the way—1,100 mi.

The operation saved an estimated 40% to 50% over shipment by freighter from a northeastern port.

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What's New / IN TRANSPORTATION

Tanker operators, who have been pressing for revision of the Shipping Act of 1916, got powerful new ammunition recently when Gulf Oil Corp. lost its classification as a "citizen company" as defined by the act.

The Congressional Information Bureau, in reporting Maritime Administration activities, now refers to Gulf as a "non-citizen" company. The reason: Section 2 of the 42-year-old Shipping Act holds that a citizen company must have only Americans on its board of directors. Gulf recently named Beverley Matthews, a director of the company's affiliate, British American Oil Co. and a British subject, to its board.

Therefore, strict interpretation of the Act makes Gulf, one of the largest U. S. majors, a "non-citizen" company. Such a designation means that the Maritime Administration has to approve all charters of American-flag tankers to Gulf and its subsidiaries.

Maritime Administrator Clarence G. Morse, in testimony before a Congressional committee earlier this summer, asked for revisions in the Shipping Act to encourage more foreign investment in the U.S. merchant fleet.

•

There was a high-level prediction last week that within 10 years nuclear-powered submarine oil tankers would be in operation in the Arctic.

Ralph E. Casey, president of the American Merchant Marine Institute, raised quite a few eyebrows when he told a Chicago meeting that there is belief in Washington "that in a matter of 10 years nuclear-powered undersea tankers will be getting oil out of Hudson Bay fields by using the Arctic route."

Casey also told the meeting that the "world's first nuclear-powered vessel that will be commercially competitive may well be a submarine oil tanker."

•

Pasotex Pipe Line Co. has bought a Scurry County (West Texas) crude gathering system from Gulf Refining Co.

Pasotex, a subsidiary of Standard Oil Co. of Texas, will now take the system's crude, about 5,000 b/d from the SACROC unit in the Kelly-Snyder field and the Sharon Ridge unit in the Diamond "M" field, and move it west through its mainline to Wink and El Paso.

•

New York Natural Gas Corp. is building an additional transmission line to supply more natural gas for Buffalo, Niagara Falls, and other western New York cities.

The company is building 30 mi. of 20-in. line from Silver Springs in Wyoming County, N. Y., to Iroquois Natural Gas Corp.'s Porterville compressor station in Erie County, N. Y. Estimated cost of the new line is $1.6-million.

•

A completely-new propeller to give high speeds with low fuel consumption for small craft may be adaptable in principle to tankers.

The Navy revealed last week that its newly-developed propeller may be adaptable to future vessels of all types. Instead of losing efficiency because of the vapor pocket that forms behind the ordinary propeller, the new prop pushes against the vapor while other parts of the propeller push against the water.

•

The Russians intend to use an "automatic welder" on some of their bigger proposed pipeline projects.

Soviet and Czechoslovak pipeline specialists are now discussing the technical problems of building lines from the Soviet-Czech border to Bohemia. According to the Czech news agency, CTK, the proposed pipelines would be joined by "a special automatic welding machine, which performs one weld per 100 seconds."

•

Another new dock facility to handle supertankers—this one at Palermo, Sicily—is ready for operation.

The just-finished Palermo improvements now make it possible for the port to handle tankers up to 80,000 tons. Tankers on the Gilbraltar-Suez route can save a day's time and 450 mi. by putting in at Palermo rather than Marseille, France, for repairs.

•

Independent refiners are threatening to complain to the government if they don't get a reduction in pipeline tariffs as a result of the recent elimination of the 4.5% tax on oil movements by pipeline.

The Independent Refiners Assn. of America has sent a bulletin to its members saying that Congressional intent in removing the tax "was to reduce the cost of transporting materials." IRAA, contending that shippers have not benefited from the tax repeal, put its threat this way:

"It may be anticipated that certain shippers in competition with carrier owners who are forced to continue to pay the tax will lodge protests with the Interstate Commerce Commission, the Dept. of Justice, and appropriate congressional committees."

•

Sohio Pipe Line Co. has installed air conditioners in some of its unattended pump stations for better operation of the stations' electronic controls.

Sohio found that heat and humidity changes caused the controls to give inaccurate measurements, which in turn caused some components to burn out. The air conditioning, Sohio says, "will maintain a more constant temperature . . . and reduce the frequency of control failures."

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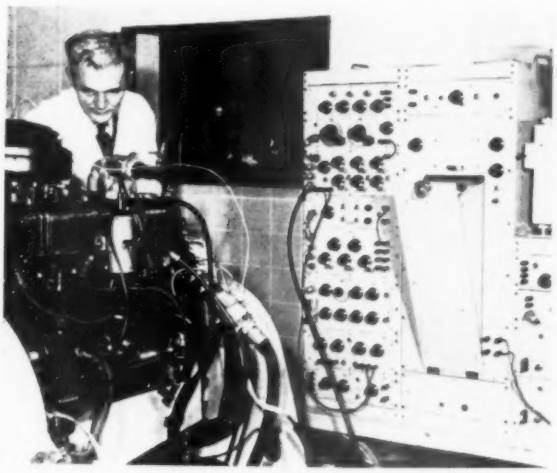
VOLATILITY TEST made in Venezuela by Esso Research & Engineering representative insures supply of right-type gasoline.



PRESSURE CHANGES in auto engine are measured with electronic indicator by scientist of Esso Research Ltd.

TEMPERATURE TEST of diesel fuel is made in Bavaria by specialist of Esso Research Ltd., based in England.

Troubleshooters Cut Sales Snags

Technical knowhow is proving more and more valuable as a tool in building oil sales. Among those able to make best use of the tool are the marketing affiliates of Standard Oil Co. (N.J.)

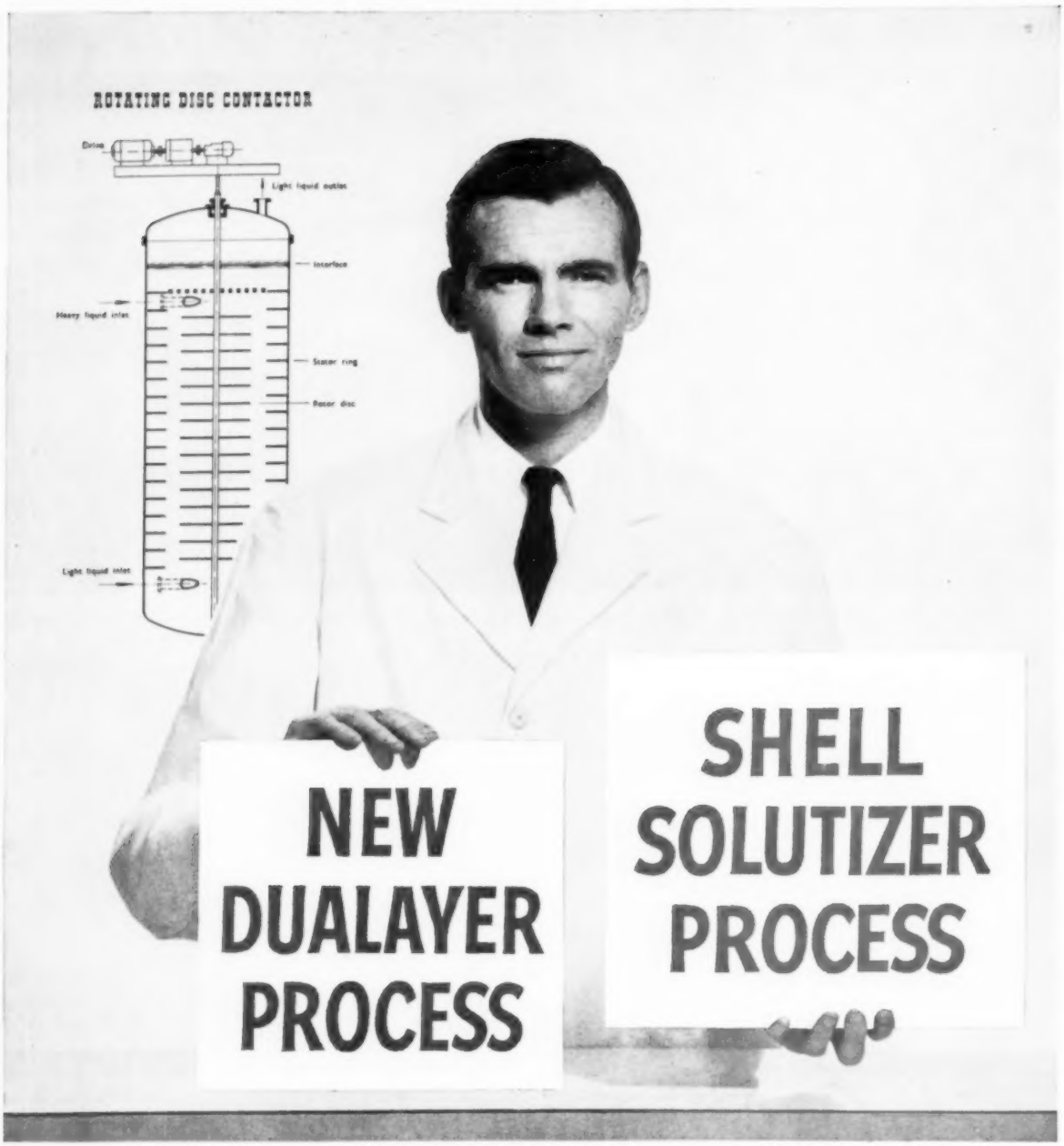
With the growing stress on technology, oil companies without their own research facilities—or with limited research—will be finding it more difficult to keep up with competition and to provide necessary customer services.

To help its affiliates around the world, Jersey Standard has set up the machinery to pool technical data and make it available to all companies. Thus, all of the marketing and refining-marketing affiliates have the benefit of the technical knowhow that is available to a big organization. Such a system also makes it possible to keep tabs on many markets and, thus, foresee future product quality needs.

The marketing technical services department of Esso Research & Engineering Co. provides this knowhow. Its staff is a team of troubleshooters who roam the world with advice and an ear for problems and ideas.

Esso Research, a wholly owned subsidiary of Jersey Standard, does essentially all of the research for the parent company's refining and marketing affiliates. The marketing technical services department was set up to serve as liaison between research and marketing.

The department is divided into two



Now Shell offers two packages to boost octane

Either process removes mercaptans almost completely at a cost of only a fraction of a cent per gallon. You save enough in TEL to pay this sweetening cost several times over. The same TEL dosage goes farther—gives you extra octanes cheaper than any other way. Both processes are now available for license. To find out which process is best for your operation, write Shell Development Company, 50 West 50th Street, New York 20, New York.

SHELL DEVELOPMENT COMPANY

groups. It has 12 staff members at the product research division in Linden, N.J., and 8 in Abingdon, England, with Esso Research, Ltd., the European affiliate of Esso Research.

The group in Linden works with all the affiliates in the Western Hemisphere. The Abingdon group covers affiliates in England, Europe, and North Africa.

Garland H. B. Davis is manager of marketing technical services for Esso Research. All of the people on his staff have technical backgrounds.

"When we hire a man for this department," says Davis, "we look for someone with five to ten years experience in product research over a wide range of products. In addition, he probably will have some work in product performance and sales."

The department gets floods of technical questions and problems from affiliates. Last year there were 2,200 queries from 44 affiliates.

Staff members keep in close touch with both marketers and researchers. Part of the staff in Linden develops technical bulletins, sends out summaries of technical information used by the various affiliates, and distributes reports by specialists on industrial lubes, solvents, and other products.

Problems presented by affiliates range from "recommending a special lubricant for railway locomotives in the Andes" to "stopping mosquito invasions of golf courses in Spain."

Many of the questions concern product quality or new uses for petroleum, but there's no end to the variety of problems to tackle. For example:

A Scandinavian affiliate wanted to know how to use heating oil to dry hay.

An African affiliate wanted to know where to get cheap kerosine stoves. (One of the other African affiliates had been buying kerosine stoves in Hong Kong for 50¢ each.)

A South American affiliate called on marketing technical services to test octane requirements 15,000 ft. up in the Andes. Test results: a car "didn't need octane" there—it could run on heptane, zero on the octane scale.

Technical services solved a diesel oil problem for the Chilean navy, and supplied background material to an Italian scientist for a technical paper.

One affiliate was worried about product quality when one of its competitors was chalking up more sales. When marketing technical services investigated the situation, it found that a dollar shortage was affecting sale of the Esso product.

The department also has assisted in testing fuels and lubricants in locations from the Sahara to the Bavarian Alps.

A flood of S.O.S. calls came from European affiliates when Volkswagen manufacturers blamed the use of multigrade lubes for constant complaints about valve trouble. The Esso Research troubleshooters got together with the manufacturers and two other oil companies to run tests. The lubes needed different additives. Once the change was made, Volkswagen approved the new lubes.

Engineering sales assistance is available to any affiliate that needs it in solving a customer problem.

Customer service calls of other types are also a function of the department.

Technical services will investigate bearing failures in big plants. Often it's the machinery at fault, and not the lubricating oil, says Davis.

Another example of tasks the department has been asked to do: Test some Rhine River boats, using a fuel with a high sulfur content.

Periodic visits to affiliates are basic to an effective liaison job.

The staff in Abingdon divides its work on an area contact basis. Each man has two or three affiliates and calls on them frequently to find out what technical help they need.

Marketing technical services also coordinates certain technical meetings between the various affiliates to encourage an exchange of information.

The department sets up three major conferences each year: (1) a European-North African technical conference, attended by about 15 affiliated companies, with 2 to 4 representatives each; (2) a conference of North American affiliates (Esso Standard, Imperial, Carter, and Humble) and Esso Standard Oil, S.A., representing the Caribbean area and Central America; and (3) a Latin American technical conference, attended by the affiliates in continental South America.

One eye is kept on competition, so that marketing and research can keep abreast of product-quality and equipment trends.

"As a result of heightened competition," says Davis, "product quality is getting new emphasis. Product quality is one way to gain an advantage without breaking the price structure."

Achieving effective communications is one of the toughest problems. Marketing technical services works very closely with the company's new Technical and Public Information Division (PW—Mar.1'57,p24), which has pioneered in the field of channeling technical information.

"I like to describe the marketing technical services department," Davis comments, "as the eyes, ears, nose, and mouth of Esso Research—but not the brains behind research."

What's New / IN MARKETING

Tax free gasoline usage in Alberta is no longer restricted to the farm.

Alberta farmers will be allowed to use "purple" gas in farm trucks operated on highways, and thus realize an estimated saving of 25% to 30% a gal., since "purple" gas does not have a provincial tax.

Prior to this, untaxed gasoline was permitted in farm trucks only while being operated on farm property.

•

Continental Oil Co.'s new wholesale bulk plant north of Denver is expected to be completed Nov. 1 at an approximate cost of $500,000.

It will include a warehouse with 23,740 sq. ft. of floor space; 19 storage tanks with a combined capacity of nearly 500,000 gal. of gasoline; diesel fuel; kerosine; lubricating oil; liquid wax and other products; office building, and complete loading facilities.

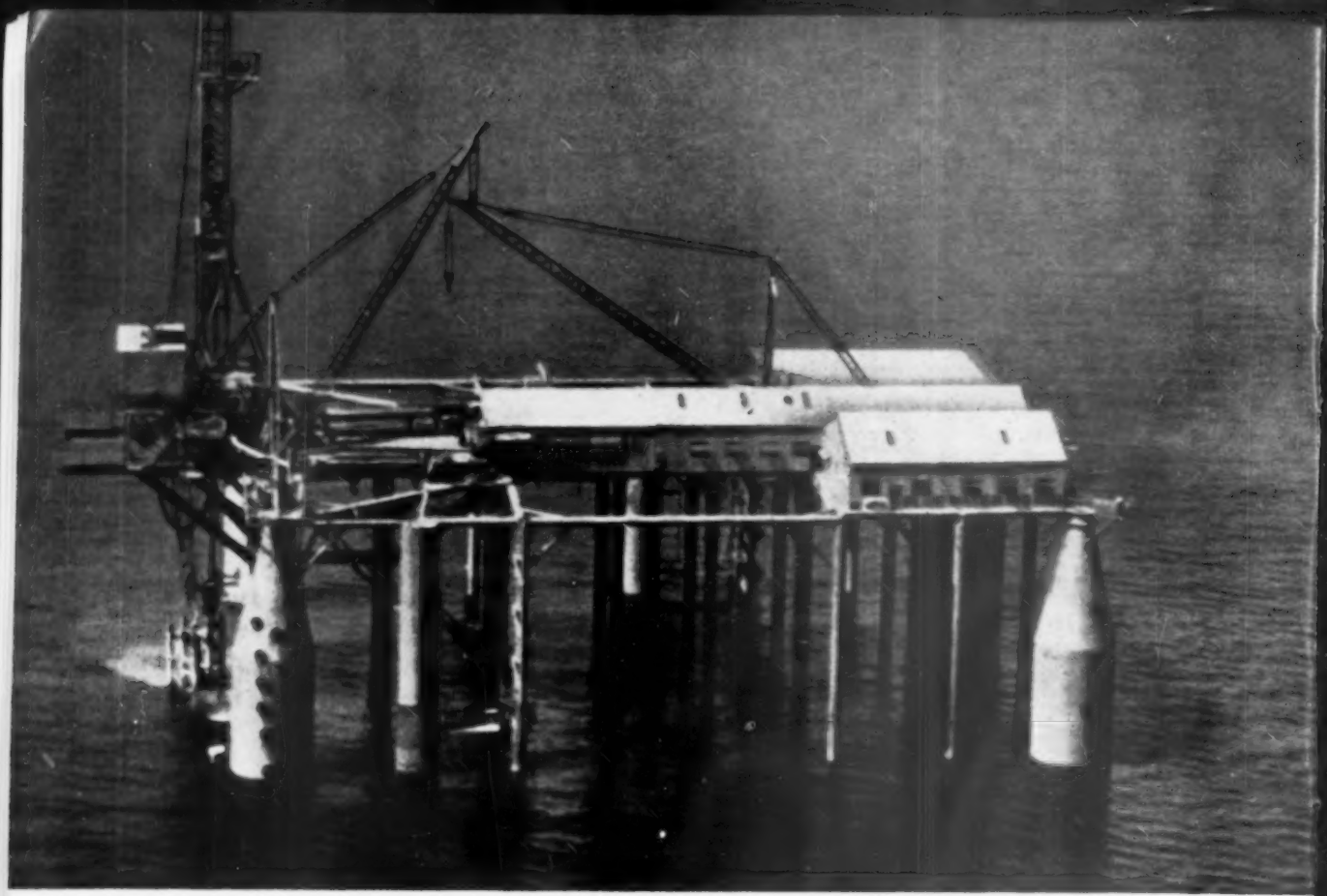
The warehouse is one of the largest clear-span warehouses in the country, according to a company spokesman.

•

The service station manpower picture is being brightened in Arkansas by a new series of dealer training courses:

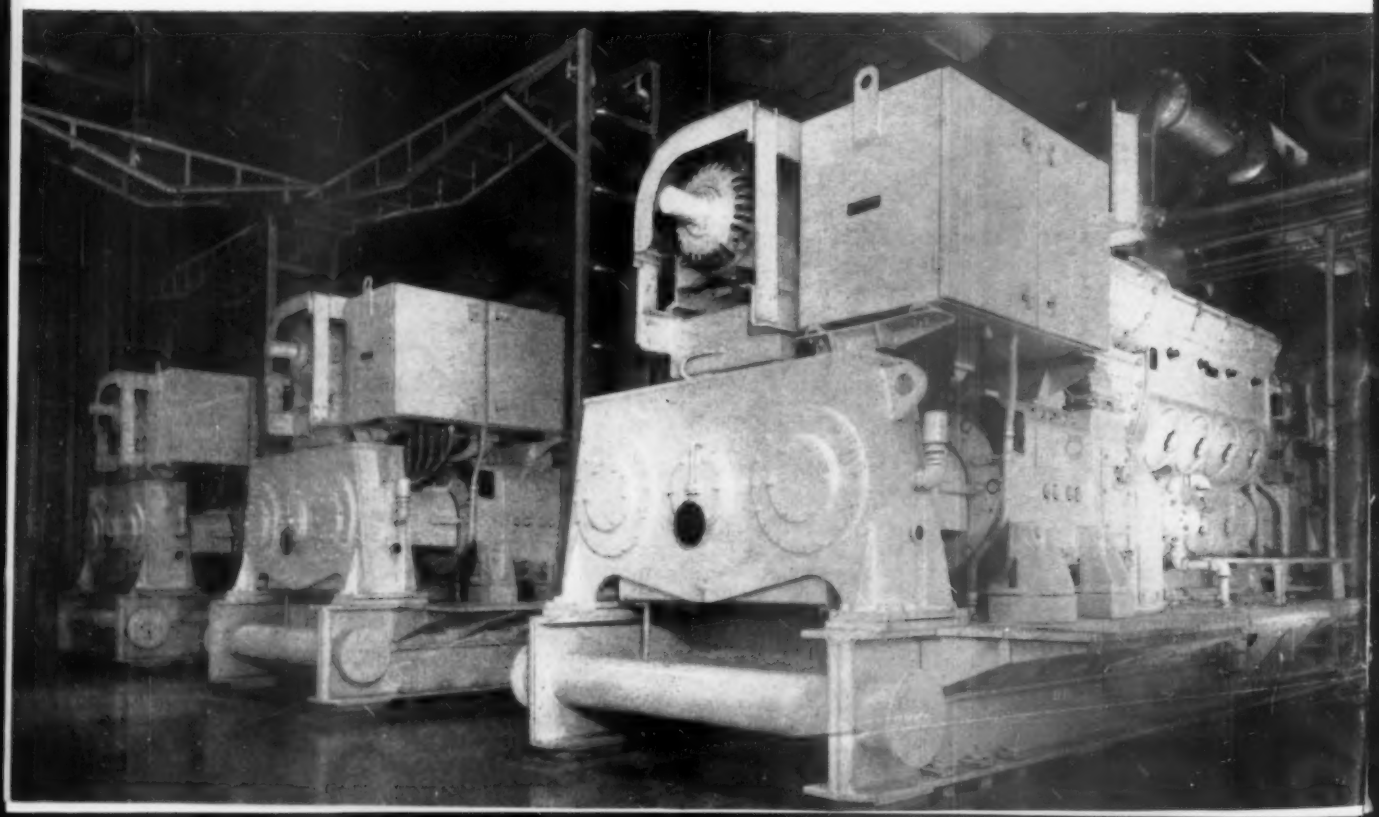
Jack Davis, Little Rock station operator, has been appointed full-time "co-ordinator for petroleum dealer training" by the Arkansas State Department of Education.

Davis is setting up state-wide training courses modeled after the "Pine Bluff plan."



Blue Water Rig No. 1 was constructed by Ingalls Shipbuilding Corporation, commissioned in September, 1957. Platform measures 242′ by 202′. Unit can drill in 70′ of water.

Three 900 horsepower Electro-Motive generator sets are shown here in white-painted engine room. Each engine drives two 500 KW generators that supply power to mud pumps, rotary table and draw works.



RIG: Blue Water No. 1

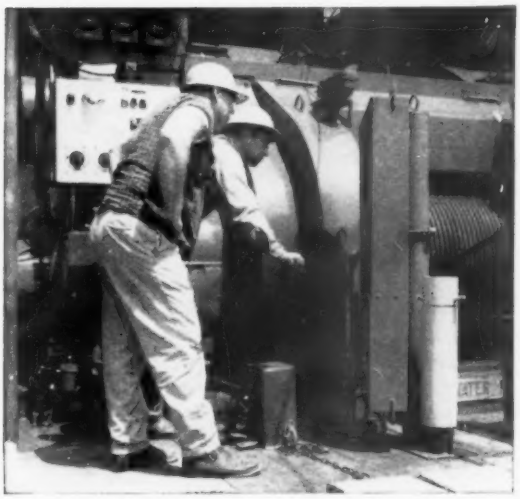
POWER: Electro-Motive

"Dependability" biggest factor in power choice

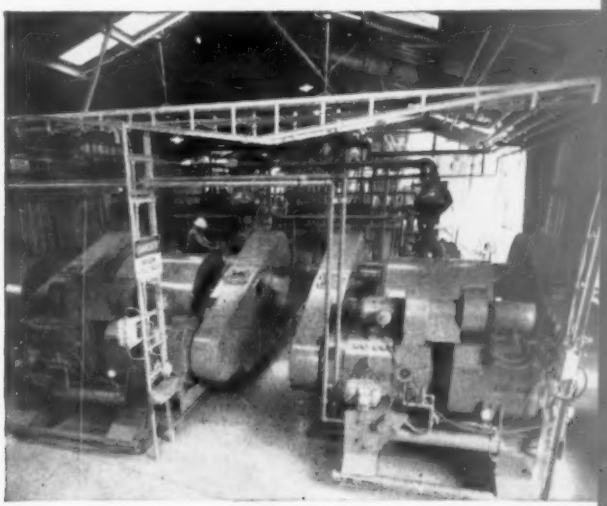
Blue Water Drilling Corporation put Electro-Motive Power in their Rig No. 1 because they knew this equipment had what they wanted: a proven record of performance under all kinds of drilling conditions; smooth, accurate, flexible power control; and only *one* manufacturing responsibility for the complete power system.

Summed up, these reasons mean just one thing—*dependability*. The stakes in offshore or deep land drilling are extremely high. Just as high are the demands on equipment. That's why a drilling company like Blue Water places the power responsibilities of their multi-million dollar rig No. 1 with Electro-Motive Power. In fact, more offshore rigs are powered with Electro-Motive Power than by any other Diesel-electric system.

If you are considering power equipment for deep land or offshore drilling, contact your Electro-Motive representative.



Control center is located beside draw works. Here, Carl Wilson, (left) Toolpusher and L. L. McMillian, Driller, watch weight indicator. Behind them is the Electro-Motive control panel which provides control of all Diesel-electric equipment.



Mud pumps are powered by 625 horsepower Electro-Motive motors. Three pumps are used. Two shown here each have two motors. Third pump has one motor. Draw works is powered by two similar drive motors.

ELECTRO-MOTIVE DIVISION · GENERAL MOTORS

LA GRANGE, ILLINOIS · *In Canada:* **General Motors Diesel Limited,** London, Ontario

Petroleum Industry Sales Offices: Houston, Texas; Los Angeles, California

Housing Stages Comeback After Long Slump

The housing industry—in the doldrums since 1955—is staging a comeback in 1958. Unless credit gets tight again, homebuilding will remain a major plus factor in the economy for the balance of the year and on into 1959.

This is good news for oil men. Homes need heat. So the resurgence in housing means brisker demand for oil and gas as home-heating fuels.

* * * *

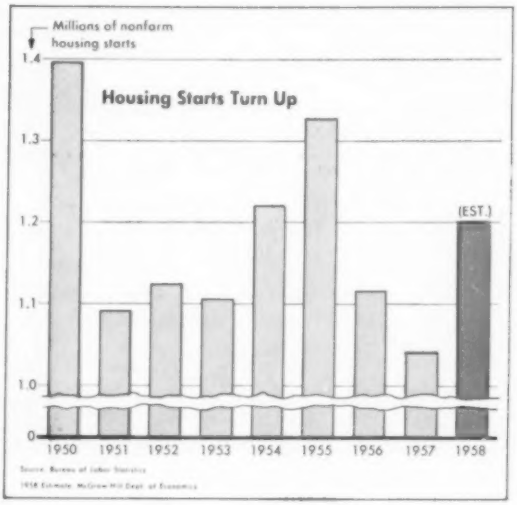
Housing got off to a poor start this year. Unusually bad winter weather held housing starts below the million-a-year rate during the first quarter. Then, in spring, a break from the elements, combined with easy money and some timely help from Congress, launched housing on its current surge. The number of private home starts (seasonally adjusted, annual rate) climbed to 1,160,000 in July—highest since January, 1956. And all summer, homebuilding activity has run well ahead of last year.

With a big fall season ahead, total housing starts this year—public and private—will number about 1.2-million. This will represent substantial improvement over 1957's total of 1,042,000 and the 1956 figure of 1,118,000.

Key to the upswing in housing has been a marked pickup in government backed home-building—homes financed with FHA-insured and VA-guaranteed mortgages. Easier credit generally—and special legislation easing terms on these mortgages—have made the FHA and VA programs attractive to lenders and borrowers alike. This has brought the big, mass builders—who put up 50 or more homes a year and cannot get enough mortgage money through conventional channels—back into the housing picture. And they are the ones who are restoring housing to a boom footing. A revival of apartment building has also given housing a big lift.

Housing financed by conventional means has shown little change recently. In fact, it has fluctuated very little since World War II. Homes built with conventional mortgages are generally high-cost, custom-built dwellings sold to high-income buyers who are little influenced by gyrations in interest rates. It's the "GI" mortgages that finance mass home-building.

Because credit is so important, it's difficult to project the trend in housing for very long. The impressive recovery in 1958 could be slowed down any time by the threat of scarce credit, high interest rates. The Federal Reserve Board has given signs lately of resuming a tight money policy. And if FRB pursues its new course vigorously, it could put a chill on the budding housing boom before 1959 gets started.



For the long term—ahead to 1960—home-builders confront many problems besides the hazards of the money market. Here are two of the knottier difficulties the housing industry must cope with in the next few years:

(1) A decline in the rate of formation of new households will cut the demand for housing. Household formation, which averaged 1-million a year from 1950-1956, may drop below 900,000 a year in 1958-1960. The decline won't come from fewer marriages. It will result chiefly from a decline in "undoubling"—new households formed by splitting up of existing households. This has been slowing down ever since the housing boom of 1950-1955.

(2) Building costs are almost certain to go on rising. This makes it increasingly difficult for home-builders to tap the lower-income market—where demand for housing is now greatest. In 1956, according to the Bureau of Labor Statistics, about half of America's families earned $4,500 or less. But only a quarter of the homes built were within range of their income. Some builders, however, are striving to win low-income customers. There's a minor boom in very low-cost prefab housing this year.

* * * *

But for all the problems housing faces, it is heading for generally higher levels. New household formation, plus demolition of old homes, should assure an annual average of close to 1.2 million housing starts through 1960—if Washington doesn't tighten up too much on credit.

Spain's Proposed Oil Law Studied

Although private oil companies have reacted favorably to Spain's proposed new oil law on an over-all basis, some provisions of the draft may prove to be stumbling blocks.

The proposed new law, designed to attract foreign capital, was submitted to the Cortes (Spanish Parliament) on July 26. Chances for eventual passage by the parliament are reported good—after the lawmakers hassle out some proposed changes when they return in the fall.

Several companies have indicated they would be interested in exploring in Spain under a favorable law.

The bill would provide for a 50-50 profits split, with a depletion allowance bringing the government's share somewhat lower.

The law, which covers Spain (Zone I) and its overseas territories including the Spanish Sahara (Zone II) and Spanish Guinea (Zone III), will permit oil companies to work in Spain with 100% foreign capital, instead of the presently required majority Spanish participation (PW—Jul.15'58, p15). Companies will have the right to export oil only after meeting Spanish demand.

Chief among industry objections is the large size of the acreage reserved for the state-owned company.

The government's Institute of National Industry (INI) has first choice over acreage under the proposed new law. It can pick 3.5-million hectares (about 8.6-million acres). In addition, the remaining acreage will be further reduced by a provision allowing the companies already exploring to round out their areas.

This, some companies feel, leaves little choice acreage for other private interests.

Another objection is a clause that permits only one concession from an exploration permit.

In continental Spain, the exploration permit would give rights to only one development concession. Even though this concession could be up to 50% of the original exploratory permit, it is felt the limit would prejudice the explorer: He could not bring separate fields of any distance within his one concession.

In the case of the Spanish Sahara for instance, the land is charted in rectangles. If oil were found, half this rectangle would have to be given up by the company.

Putting a limit to the number of concessions is also considered unrealistic, since oil companies would have to gamble large sums of money in limited areas of unproven acreage.

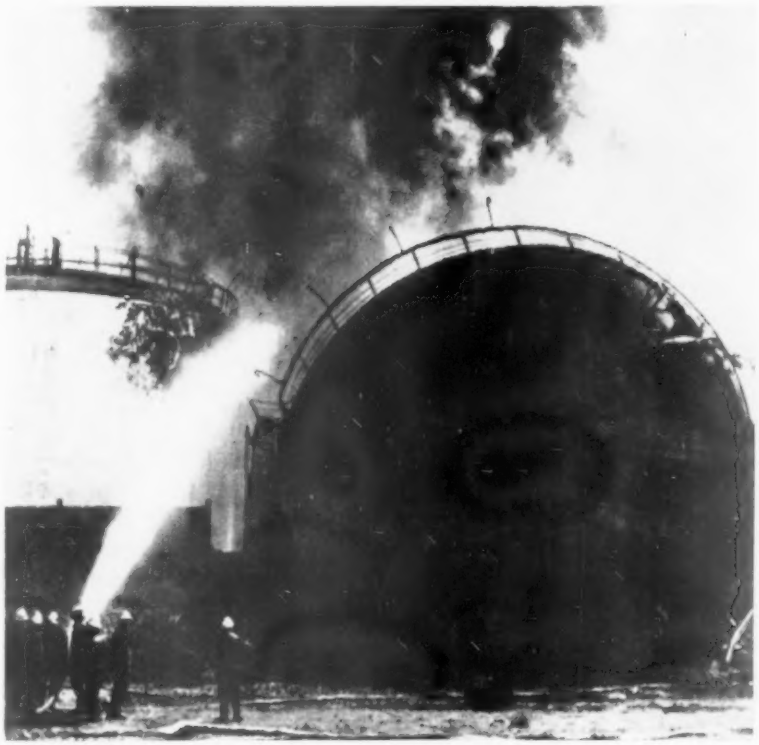
Although precise acreage allotments are still not fixed, some critics fear they may not be enough for adequate exploration. In the Spanish Sahara, for instance, a special map is to be drawn up, carving the acreage into blocks of about 253,000 hectares apiece. The total number of licenses one company may hold is four.

Duration of the exploration period is also considered too short for discovery of commercial oil.

As the bill now stands, the companies get five years plus a two-year extension in continental Spain, and six plus two in Spanish possessions—with mandatory reductions in acreage. In exceptional cases, an additional two-year extension may be granted.

Some tax and rental articles are also considered rather severe. Some critics of the law have objected to the size of the dollar tax per hectare. Others find the rentals a little too high.

Most oil companies, however, seem optimistic that these wrinkles will be ironed out by the time the law is through the Spanish Parliament.



Algerian Rebels Sabotage Oil Units in France

Black smoke billows from these blazing oil tanks at the Mourepaine tank farm near Marseilles, France, following an attack by Algerian nationalist groups last week. This was just one instance of the wave of terrorist attacks on oil terminals and refineries across France.

The Mourepaine storage terminal, used by seven French, American and other oil companies, was almost totally destroyed by the fire.

Other attacks were made on the Mobil Oil terminal at Toulouse and the Purfina terminal in Narbonne.

Unsuccessful attempts were also made to sabotage the Esso refinery in Port Jerome, the British Petroleum refinery in Lavera, the Shell refinery in Grenoble, and the Cie. Francaise de Raffinage refinery at La Mede. Later in the week, four gasoline storage tanks at Roven were blown up.

Loeb Rhoades Slates Argentine Tests

BUENOS AIRES—Carl M. Loeb, Rhoades & Co. has slated drilling in the near future on three producing structures in Argentina's Mendoza field: La Ventana, Vacas Muertas, and Punta Dedarda.

The New York banking house last week officially released details of its $100-million contract with the government oil company, Yacimientos Petroliferos Fiscales (PW—Aug.15 '58,p42). The contract has been approved by executive decree of the Argentine government.

The company is undertaking a major oil financing program with two distinct, but related, programs: one for development and production of oil reserves, and the other for financing and construction of transportation and other facilities. It will provide all the capital and assume the risk as to whether production will suffice to amortize the investment.

The company said its payments will be determined by the value of production: 50% of that value for reimbursement of capital advances, and 20% for the bank's profit.

Work programs will be drawn up by mutual agreement. An operating committee, on which YPF is represented, will carry out actual performance.

YPF may, at its option, buy out the banking firm's interest. Loeb Rhoades said it will offer 20-year YPF bonds if financing is needed for additional transportation facilities as production increases.

A newly formed Argentine company, meanwhile, has joined the list of companies offering oil aid to the government.

Cia. Argentina de Perforacion Petrolera S. A. has offered YPF unspecified amounts of drilling equipment for immediate use.

Drilling projects in areas specified by YPF would be executed by Argentine workers under a U.S. expert's supervision.

The new company is headed by Juan Sabatini, and has some $7-million authorized capital, subscribed entirely by Argentines.

At the same time, Argentine president Arturo Frondizi, sent a bill to Congress to nationalize the country's petroleum resources. But the bill will have no effect on the development contracts recently signed with foreign companies.

The bill makes all petroleum the inalienable property of the country and gives YPF sole development rights. It abridges the property rights of the provinces over their oil resources.

The new contracts were signed with YPF and have no ownership rights to either land or oil.

To meet increasing oil activity, YPF has issued two tenders for tankers and other ships.

Under the first, which closes Sept. 16, the government oil company called for: four 17,000-ton tankers; three 7,000-tonners; two 5,500-tonners; two tow boats; and one fire extinguisher boat.

Preference will be given to bids for peso payment, barter deals, or European multilateral currencies. Offer must be valid in 90 days.

Under the second, receivable until Oct. 21, YPF called for two river tankerboats, a 1,000-ton freighter, and one towboat. Only peso offers are acceptable.

IPC May Yield Some Acreage

LONDON—The Iraq Petroleum Co. last week promised the new Iraq government that it would be ready to discuss relinquishing parts of its Iraq oil concession area.

G. H. Herridge, IPC managing director, made this promise on his first visit to Baghdad since the July 14 revolution. He met with Brigadier Abdul Karim Kassim, the new Prime Minister, with Ibrahim Kubba, Economics Minister, and Mohammed Hadid, Finance Minister.

Herridge told a press conference in London that:

The new Iraq ministers repeated assurances of their intention to honor existing agreements with IPC. But they reserved their right to invoke the terms agreed in September, 1951, that stated that in the event a neighboring country received a higher average revenue per ton of oil exported than was currently received by Iraq, "the government would claim no less."

Herridge pointed out that the circumstances envisaged by the 1951 letter had not arisen, but that "if they should arise the company would be willing to consider and discuss the position."

IPC outlined its plans for increasing productive and export facilities "which, by the end of 1961, would permit total exports from Iraq at the rate of about 57-million tons a year (about 1.1-million b/d)," Herridge said. This total is nearly double the 1957 rate.

IPC also assured the government that "the companies (of IPC) would cooperate in securing the continuance and expansion of Iraq's oil exports," he reported.

Herridge also reviewed outstanding differences between Iraq and the company regarding calculation of Iraq's share of profits for 1955 and 1956. "The government indicated its willingness to apply the mechanism provided in the agreement for settling disputes which may involve arbitration," the IPC spokesman said.

He further reviewed with the ministers his agreement with the previous government to the "principle" of relinquishment of portions of IPC's concession areas, and promised to frame proposals for further discussions.

Red China's Oil Output Rising

RED CHINA—Communist China's oil output has been steadily climbing in the "past few years at a rate between 20% and 27% annually," according to China's vice-minister of petroleum, Li Jen Chun.

Writing in the People's Daily in Peking, the oil minister admits China's output is still far behind the country's economic development.

He says the government is planning a vast new oil program based on modern and primitive methods. He adds some 200 synthetic oil plants will be built this year by various provincial and municipal authorities. Presumably most of these are tiny pot distilling methods.

Foreign observers estimate that oil accounts for one-quarter of all Chinese imports from the Communist bloc. Russia recently reported it exported 1.8-million metric tons to China in 1957. This breaks down in metric tons as follows: 380,400 of crude; 573,100 of gasoline; 372,800 of kerosine; 380,200 of diesel oil; and 95,300 of lubricating oils.

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What's New / AROUND THE WORLD

Mideast Crude Output Nears Record High

Crude output in key Middle East producing states climbed to a near-record level of 4,123,500 b/d in July. This is just 2,100 b/d below the all-time high of 4,125,600 b/d set in March (PW—May2'58,p40).

The total represents an 87,000 b/d boost over the previous month (PW—Aug.8'58,p42). All countries except Kuwait increased. Totals in 000 b/d:

	July '58	July '57	June '58
Kuwait	1,353.5	1,293.9	1,383.2
S. Arabia	1,046.2	1,209.8	951.3
Iran	793.0	756.0	789.0
Iraq	752.5	458.5	752.0
Qatar	178.3	160.0	161.0
Total	4,123.5	3,878.2	4,036.5
7-mo. avg.	4,012.4	3,189.7	

•

EGYPT—The Venezuelan govern- has accepted an invitation to participate in the Pan-Arab Oil Congress and oil exhibition in Cairo in November.

Meanwhile two German companies have submitted applications to participate: Deutsche Erdoel, which is currently exploring in Syria; and Bayerishe Anilin and Soda Fabrik, manufacturers of oil exploration equipment.

•

IRAQ—The administrative purge now being carried out by the new leaders of Iraq has touched a number of top oil officials in the government, according to reports reaching Beirut.

Ihsan Rifaat, director general of the petroleum administration, and Mohammed Naqib, director general of the government oil refineries administration, have been discharged for five years. Rifaat's assets have been frozen, as have those of Dr. Nadim Pachachi, former Minister of Economics, who is among a group of 110 former leaders of the old regime now on trial (PW—Aug.29'58,p31).

Dhia Jaafar, former minister of development and closely connected with Iraq's oil policy, was not arrested since he was in Britain when the July 14 coup took place.

Ibrahim Allusi continues in his former post as director of mines in the petroleum administration.

•

FRANCE—The new Hassi Messaoud field in the Sahara helped boost total French output to a new high of 38,474 b/d in the year from August, 1957, to July, 1958.

This is a 25% jump over the previous year's total of 30,660 b/d for France and its overseas territories, according to the Bureau de Recherches de Petrole.

•

ISRAEL—Pan-Israel Oil Co. and Israel-Mediterranean Petroleum have spudded a new test 20 mi. southeast of Tel Aviv.

The well, which will be carried to 8,000 ft., will seek production in the Heletz—and deeper—sands. The Heletz sands now produce about 2,000 b/d from 20 wells in the nearby Heletz field.

•

MALTA—British Petroleum Co. is spudding this British colony's first 15,000 ft. deep-test this week.

The well, No. 2 Naxxar, is 4 mi. northwest of Valletta. A shallow exploration test was drilled on the island in 1955.

•

UNITED KINGDOM—Foster Wheeler Ltd. will build Esso Petroleum's 100,000 b/d Milford Haven, Wales, refinery.

The $35-million plant (plus $15-million port facilities) will be served by a 3,500 ft. tanker jetty capable of accommodating 100,000-ton supertankers (PW—Sep. 6'57,p46). Construction of the refinery is expected to take a little over two years.

•

MEXICO—Troops and riot squads used tear gas last week to quell violence between labor factions in the nationalized oil industry.

They were called out to stop a street fight between supporters and foes of the elected leaders of two sections of the Petroleum Workers Union.

It was labor disturbances in the oil fields that led to nationalization of private oil companies in Mexico in 1938.

Equipment Arrives for Argentine Pipeline

This pipelayer is being unloaded in Buenos Aires for use on the 24-in. natural gas pipeline that will connect the Campo Duran fields with Buenos Aires. Work is slated to start this month.

Meanwhile, Argentina is looking over the 26 bids it received for various parts of the 630-mi., 10¾-in. products pipeline system to connect the Lujan de Cuyo refinery with Buenos Aires. No bids were received for the entire products system.

Three groups made various offers to do right-of-way work and lay pipe: a U. S. group, Hallmac Construction, Hood Construction, and Fulghum Contracting, for $7.7-million, plus an offer of German-made pipe for $10-million; a German group, represented by Adea S. A., for $35-million; and a Swiss group, represented by Sayma, S. A., for $25.5-million.

Top Oil Men's Earnings Show Gain

Although the rate of increase in earnings of top oil executives last year didn't match that in some previous years, it exceeded the average income rise of the 18 major industries studied, for the second consecutive year (table).

This finding is brought out in an analysis of executive compensation of U.S. industries by McKinsey & Co., management consultants headquartered in New York City. The study was prepared for PETROLEUM WEEK by McKinsey's John B. Merrell. Complete results of the survey appear in the September-October, 1958, issue of the Harvard Business Review.

The information is based on data filed with the Securities & Exchange Commission for 1957 by 660 companies in 18 major industries.

Average earnings of chief executives in 33 oil companies studied increased 2.6% over 1956 figures.

Although this increase is lower than the 6.2% rise in 1956, it is far healthier than the 18-industry average of less than ½% (which included 9 industries in which the chief executive's pay actually decreased).

In the 33 oil companies, 19 chief executives received more pay in 1957 than in 1956; 11 showed no change; and three top spots had a compensation decrease. In previous years studied, the largest number of increases was 17.

The former oil-industry trend of a widening gap between the chief executive's pay and that of his top subordinates abated during 1957.

The second-highest paid men gained on the chief. The third slipped back slightly, while the fourth remained in about the same relationship. The spread now is about the same as in the other industries.

Oil employees in the middle management bracket also average more income than their counterparts in 15 other industries studied at the same level.

Top oil executive pay is below industry average in comparison with company sales, assets, and profits. But the spread continues to narrow.

The data (table) shows that oil executives of companies having profits at the levels indicated still average about 20% below their equals in other industries, although the oil man's position has improved a great deal since 1955.

How compensation for top oil men measures against other industry chiefs...

Oil trails by profits yardstick

Company profit level	Chief oil executive pay as a percentage of average for heads of all industries: 1957	1955
$3-million	83%	71%
$10-million	79%	59%
$40-million	75%	70%

Oil drops a notch in rate-of-gain

Industry	Average percent increases in chief executive's compensation: 1957 over 1956	Rank	1956 over 1955	Rank
Tobacco	9.9%	1	—0.1%	15
Non-ferrous metals	5.9	2	9.1	1
Aircraft manufacturing	3.8	3	1.3	13
Railroads	3.1	4	4.3	7
OIL	**2.6**	**5**	**6.2**	**4**
Public utilities	2.2	6	6.9	3
Electrical equipment	1.6	7	2.2	12
Food and beverages	0.9	8	4.4	6
Chemicals	0.2	9	2.4	11
Light machinery	—0.1	10	4.2	8
Heavy machinery	—0.2	11	4.8	5
Paper and paperboard	—0.2	12	3.2	10
Automotive	—1.2	13	—1.1	16
Building materials	—1.3	14	3.6	9
Retail chains	—2.9	15	—2.4	17
Steel and iron	—4.3	16	9.0	2
Textiles	—5.7	17	—6.0	18
Department stores	—6.5	18	0.2	14
Averages	+0.43%		+2.9%	

Income-spread about average

	Percent of chief executive's compensation: 1957 — Oil industry	1957 — Average of 18 industries	1956 — Oil industry	1956 — Average of 18 industries
Second-highest paid	73%	69%	68%	70%
Third-highest paid	56%	57%	59%	57%
Fourth-highest paid	50%	52%	50%	51%

The disparity when related to sales, assets, and profits apparently arises because many of the oil companies are extremely large, and top executive compensation has not been directly related to company size, according to Merrell.

In fact, 16 of the 33 oil companies analyzed have a sales volume that exceeds $400-million.

As a result, Merrell says, the actual salaries for top oil executives are probably higher on the average than those of the heads of companies in other industries. This also applies to the next three highest paid men.

DEPT/Service & Equipment Companies

CHARLES A. CONE is president of the recently organized Oil States Engineering Co. He is a former vice-president of Dresser Engineering Co. **W. G. Storey,** former vice-president of Trend Construction Co., Oklahoma City, is now vice-president of Oil States. Secretary-Treasurer is **A. C. Young,** former chief mechanical engineer for Dresser Engineering Co.

J. N. Lind

C. A. Cone

JOHN N. LIND is the new director of transportation for Armco Steel Corp. He formerly was general traffic manager for National Supply Co., a subsidiary of Armco. Lind replaces **E. H. Dorenbusch,** who is retiring after 46 years with Armco. Lind joined National in 1926.

J. C. GIVENS, former manager at Big Lake, Tex. has been promoted to district manager at Hobbs, N. M. for Schlumberger Well Surveying Corp. Other promotions and transfers: **J. L. Reinders,** former field engineer at Artesia, is now district manager at Big Lake; **G. H. Thomen,** former location manager in Corpus Christi, is now assistant to the area manager at New Orleans; and **T. W. Cobb** has been named sales engineer in New Orleans.

J. M. FINGER, former Bethlehem Supply Co. store manager at Beaumont, Tex., has been transferred to the Bethlehem Steel Shipbuilding Division at Beaumont in a sales capacity. **H. R. Dooley,** former chief clerk, replaces Finger as store manager. Other changes are: **H. G. Nelson,** Alice (Tex.) store manager, promoted to special representative and transferred to Gulf District office in Beaumont; and **L. R. Muhlinghause,** special representative at Corpus Christi, transferred to Alice to replace Nelson.

R. M. Cox, machinery sales representative at Shreveport for the Ark.-La.-Tex. district, is promoted to special representative there specializing in tubular goods; **R. A. Blair,** special representative at the Kilgore (Tex.) store is promoted to special representative for the Ark.-La.-Tex. district and will continue to headquarter in Kilgore; **B. D. Robbins,** machinery sales representative for the West Texas-New Mexico district at Midland transferred to the Rocky Mountain district office at Casper, Wyo., in the same capacity.

Other shifts: **G. H. Underwood,** Wichita Falls (Tex.) store manager, promoted to local representative and assigned to North Central district office at Wichita Falls; **L. H. Ligon,** assistant store manager at Wichita Falls, replaces Underwood as store manager; **B. D. Johnson,** floorman at Magnolia, Ark., promoted to field representative and transferred to Mineola; **G. H. Ford,** Sweetwater (Tex.) field representative, transferred to the Abilene (Tex.) store in the same capacity; and **J. E. Guy,** floorman at Snyder (Tex.), promoted to field representative there.

BOWEN ITCO, INC., has recently acquired the S. R. Bowen Co. of Santa Fe Springs, Calif., according to **Fred N. Osmun,** Bowen ITCO president. Bowen ITCO, located in Houston, manufactures oil field specialty tools.

LEWIS HEARON is manager of the newly-opened supply store at Perryton, Tex. for Industrial Supply Co. He formerly was field salesman for Industrial at Snyder, Tex. **Bob Richardson** is chief field salesman, and **Stanley McKee** is floorman in the Perryton store.

GEORGE S. LEACHMAN is a new technical development representative in the oil and gas industry for Allied Chemical Corp. He is assigned to Allied's Nitrogen Division, working out of Dallas. Prior to joining Allied, Leachman was with Seaboard Oil Co.

E. L. Gamble

G. W. Ppool

E. L. GAMBLE has been promoted to assistant manager of the Kansas-Oklahoma-North Texas division of Continental-Emsco Co. with headquarters in Tulsa. **R. A. Brewer** is division manager. **GEORGE W. PPOOL,** former assistant to Gamble, was promoted to fill Gamble's vacancy as manager of the Kansas district.

RUDOLPH CROWLEY will be manager of Republic Supply Co.'s new store at Tioga, North Dakota. Opening date for the new store is around Sept. 15. Crowley formerly was manager of the Fairfield (Ill.) store. Assistant store manager will be **P. L. Williams,** head floorman of the Fairfield store.

G. C. PRYOR has been promoted to manager of the Laurel (Miss.) store for Jones & Laughlin Supply Division. He was formerly a salesman at Laurel. **P. C. Smith,** formerly salesman at Woodward, Okla., was appointed assistant store manager at Morgan City, La. **L. R. Elston** transfers to Esteven, Sask., Canada, as store manager. He was formerly J&L's store manager in Virden, Man. **E. B. Clark,** formerly storeman at Houston, was promoted to assistant store manager there.

J. Thompson

F. Wagner

JOE THOMPSON and **FERN WAGNER** have been appointed assistant sales managers for American Iron & Machine Works, Oklahoma City, according to **Bert Wheeler,** sales manager. The two men will be responsible for management, marketing, and training of the domestic sales department.

ROBERT G. BURSON is the new general sales manager of the Mechanical Goods Division, Dayton Rubber Co., according to **C. M. Christie,** president. He succeeds **L. C. Strobeck,** who recently retired. Burson joined Dayton Rubber in 1956. In his new position he is in charge of marketing of Dayton's V-belts, hose, and allied products.

JAMES G. BOUSKA has moved up to sales manager of the Los Angeles branch of Exide Industrial Division, The Electric Storage Battery Co. Bouska, former assistant branch sales manager in San Francisco, succeeds **Robert J. Muth,** recently transferred to Philadelphia as field sales manager. Bouska joined the company in 1926.

RALPH J. DICUS has been appointed sales manager of the North Texas and Oklahoma district for Cardwell Manufacturing Co. with headquarters in Oklahoma City. **Clyde Lackey,** Cardwell's domestic sales manager, made the announcement.

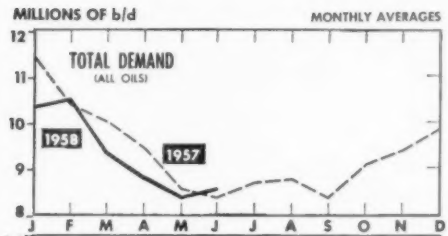
R. J. Dicus

L. P. Harman

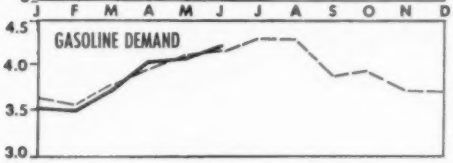
LYNDON P. HARMAN has been appointed sales manager of Well Completions, Inc., a Denver-based air drilling firm. Prior to this, he was Rocky Mountain-Mid Continent Division sales manager for Eastman Oil Well Survey Co.

PETROLEUM WEEK'S

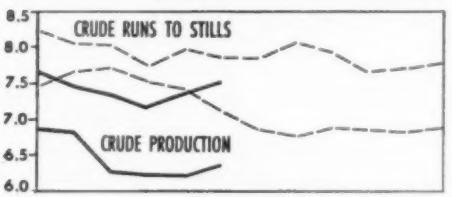
Fingertip Figures



TOTAL DEMAND
Latest week average *
Year ago 8.728

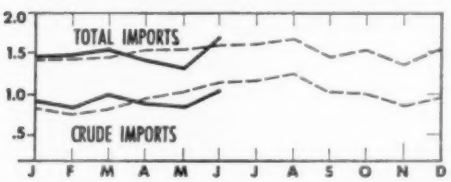


GASOLINE DEMAND
Latest 4-week average *
Year ago 4.262



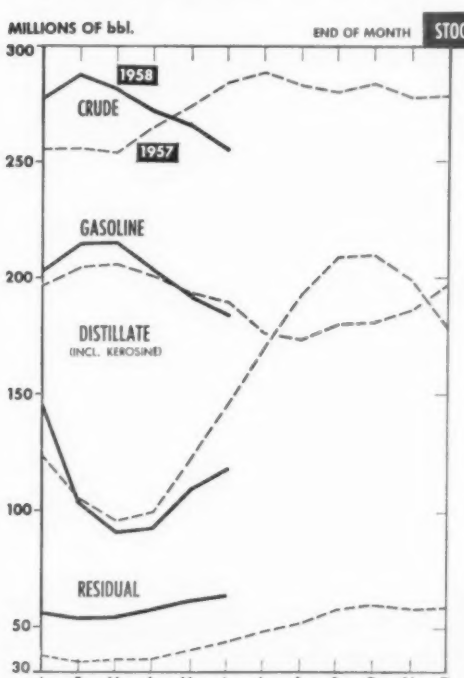
RUNS TO STILLS
Latest week *
Previous week 7.905
Year ago 8.327

CRUDE PRODUCTION
Latest week *
Previous week 6.875
Year ago 6.766



TOTAL IMPORTS
Latest week *
Previous week 1.441
Year ago 1.478

CRUDE IMPORTS
Latest week *
Previous week .882
Year ago 1.156



CRUDE STOCKS
Week-ended 8-23 251.0
Previous week 250.0
Year ago 287.7

GASOLINE
Latest week *
Previous week 173.8
Year ago 171.7

DISTILLATES
Latest week *
Previous week 160.1
Year ago 188.3

RESIDUAL
Latest week *
Previous week 66.8
Year ago 52.5

The three-month trend of rising domestic crude production may have to be checked during the remainder of 1958 to prevent stocks from getting too far out of balance.

That is the feeling of many buyers and producers who are concerned over the current imbalance between gasoline and distillate inventories.

And with refiners generally reluctant so far to make major reductions in runs, some observers say that:

A leveling out or a reduction in domestic crude output is the most effective way of holding refinery runs down to prevent an unnecessary stock buildup.

U.S. crude output is now about 700,000 b/d higher than the low point of the year reached in mid-May. And runs to refineries are nearly 700,000 b/d over mid-May.

A leveling out or cutback in crude output would probably hit hardest at the major states—those that reduced the most during 1957 when stocks were rising fast.

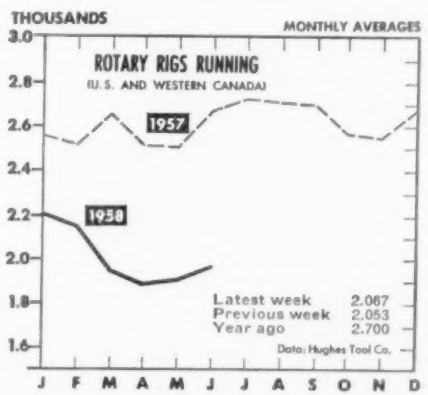
Texas, for example, is now producing 2.7-million b/d, up 22.5% (420,000 b/d) over mid-May, but still 300,000 b/d under its early September, 1956, rate before the Suez Canal shutdown.

Louisiana's output is up 33,000 b/d over mid-May and 61,000 b/d over the pre-Suez level. In Oklahoma, current output is 27,000 b/d over mid-May, but 6,000 b/d under the pre-Suez volume.

Much sharper increases have been made in New Mexico and Utah since the Four Corners was tapped by pipelines this year. New Mexico's northwest production is up five-fold over mid-May and Utah has had a 65% gain.

* * *

(*) Due to the Labor Day holiday, most figures for the week ended Aug. 29 were unavailable at press time.



The Market Trend

September: A Month for Decisions

September shapes up as a decisive month for the East and Gulf Coasts. Low distillate stocks, low heating oil prices, and an increase of one day in Texas allowables point to changes on the way. These changes could affect all product prices from gasoline to residual fuel.

Heating oil prices can stand an increase along the Atlantic Coast. Prices have been strong most of the summer. Stocks on the East Coast are down 11-million barrels from last year. The two advances of 0.25¢ each in No. 2 fuel prices in July on the Gulf Cost were solid enough in themselves, but they became rock hard with the rise during August in clean tanker rates for Gulf to East Coast trips.

Gulf Coast distillate prices are equally as hard as those along the Atlantic Seaboard. And refiners say that an increase in heating oil prices "has to come" to maintain their price equity from the crude barrel when the necessary change is made in refinery yields. The firmness of their conviction is pointed up by the scant offerings of heating oil and an unwillingness to quote prices other than on a date-of-lifting basis to make a sale. Stocks are down 16 million bbl. on the Gulf and East Coasts.

The anticipated price increase for heating oils, though, could lead to trouble in gasoline and heavy fuel markets. A price boost for distillate usually will prompt switches in refinery yield patterns. But frequently it will also encourage higher throughput, which would mean an unnecessary buildup in the already bulging stocks of gasoline and residual fuel. Mild weather in September might bring pressure on some refiners to empty gasoline tanks.

Too, some refiners say that the higher Texas allowable could bring on a drop in bunker "C" prices. A higher allowable is almost synonomous with higher refinery runs. And more residual output now would create heavy pressure to lower the $2.25 bunker "C" price at the Gulf. Texas and Louisiana coastal stocks are up more than 1 million bbl. over a year ago.

Bid Buzz at Chicago:

Bids to supply the Chicago Park District with winter fuels had the Chicago trade buzzing. Wells Petroleum Co. offered 374,400 gal. of No. 2 fuel at a fixed price of 11.72¢, delivered in tank wagons. Other suppliers are asking two questions: What happens if and when heating oil prices reach 10.5¢ at wholesale this winter (and some think it may even hit 11¢)? The other question is—who's the refiner?

Market Improves for Clean Ships

Rates for clean coastwise voyages have reached their highest point since they "fell out of bed" in April, 1957. A handy-sized ship was done clean just before Labor Day at ATRS/USMC plus 10%. Chartering circles see this rate holding for some time. It may also improve. But, there is criticism that MSTS is insisting on "unrealistically low" rates.

Algerian Crude Posted at $2.90

Cie. Francaise des Petroles, on Sept. 1, began posting Hassi Messaoud crude. Initial price is $2.90 bbl. for 40-gravity and above, f.o.b. Philippeville, Algeria. Meanwhile, construction began four months ago on a 24-inch, 310-mile pipe line from Hassi Messaoud field to the port of Bougie on the Mediterranean. Completion date of the pipe line is set for October, 1959.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All Prices as of August 29

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U.S. Gulf Coast, cargoes
- Gasoline, 98 oct prem. . . . 12.25-12.875
- Gasoline, 92 oct reg. . . . 11-11.5
- Kerosine . . . 8.875-9.125
- Heating oil, No. 2. . . . 8.625-9
- Gas oil, 48-52 d.i. . . . 8.875-9.5
- Fuel oil, bunker "C". . . . $2.25-2.40

Caribbean, cargoes
- Avgas, Grade 100/130. . . . 16
- Gasoline, 93 oct research prem. . . . 11.25
- Gasoline, 87 oct research reg. . . . 10.375
- Gasoline, 79 oct research. . . . 9.625
- Gasoline, 70-72 oct motor method. . . . 9.5
- Kerosine . . . 9.125
- Heating oil, No. 2. . . . 8.625
- Gas oil, 48-52 d.i. . . . 8.875
- Fuel oil, bunker "C". . . . $2.25

New York Harbor, barges
- Kerosine . . . 9.95-10.2
- Heating oil, No. 2. . . . 9.45-9.7
- Fuel oil, No. 6. . . . $2.57-2.65

Okla-Group 3, northern shpt., bulk
- Gasoline, 89 oct reg. . . . 12-12.75
- **Kerosine . . . 10†-10.5**
- Heating oil, No. 2. . . . 9
- Fuel oil, No. 6. . . . $1.30-1.45

Chicago, bulk
- **Gasoline, 91 oct reg. . . . 12.25†-12.5**
- Heating oil, No. 2. . . . 9.5-11.35
- Fuel oil, No. 6 high sulfur. . . . 6.65-6.75

Los Angeles, rack
- Gasoline, 88 oct reg. . . . 13-13.6
- Diesel fuel, PS 200. . . . 10-11.25
- Light fuel, PS 300. . . . $3.05
- Heavy fuel, PS 400. . . . $2.50-2.70

Natural Gasoline, Grade 26-70
- FOB Group 3. . . . 4.5
- FOB Breckenridge, Tex. . . . 4

LP-Gas
- Propane, Oklahoma (Group 3). . . . 5

Pennsylvania Lubes
- Bright stock, 25 p.t. . . . 22
- 200 vis. neutral, 25 p.t. . . . 21

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent 95 v. i. . . . 23-24
- Neutral, solvent, 200-210 vis. . . . 19.5-20.5

Gulf Coast Lubes
- Bright stock, solvent, 95 v. i. . . . 24
- Neutral, solvent, 200 vis. . . . 20.5

Eastern Hemisphere

Singapore (Pulau Bukom), cargoes
- Avgas, grade 100/130. . . . 17.25
- Gasoline, 79 oct research. . . . 10.375
- Kerosine . . . 10.375
- Gas oil, 48 d. i. minimum. . . . 10.25

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9 . . . 2.83-3.07
- North Dakota, 36.0-36.9. . . . 3.07
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9. . . . 3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9. . . . 2.92-3.22
  - West Texas, sweet, 36.0-36.9. . . . 3.00-3.07
  - West Texas, N. M., inter., 36.0-36.9. . . . 3.00
  - West Texas, N. M., sour, 32.0-32.9. . . . 2.86
  - East Texas, flat. . . . 3.25
  - Mirando, 28.0-28.9. . . . 3.31
- Illinois Basin, flat. . . . 3.00
- Pennsylvania Grade, Bradford dist., flat. . . . 3.90
- California, Signal Hill, 21.0-21.9. . . . 2.63-2.73‡
- North Louisiana-Arkansas, 36.0-36.9. . . . 2.82-3.02
- Wyoming, sweet, 36.0-36.9. . . . 2.90-3.00
- Wyoming, sour, 32.0-32.9. . . . 2.71

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.). . . . 2.61
- Leduc-Woodbend (Alta.) . . . 2.67
- Redwater (Alta.) . . . 2.56
- Daly (Man.). . . . 2.39
- Smiley (Sask.). . . . 2.33

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 48.0-48.9, Tucupido. . . . 3.75
- San Joaquin, 41.0-41.9, Puerto la Cruz. . . . 3.34
- Oficina, 35.0-35.9, Puerto la Cruz. . . . 3.05
- Tia Juana, Medium, 26.0-26.9, Amuay. . . . 2.55
- Bachaquero, flat, Las Piedras. . . . 2.03-2.08
- Tarra, 38.0-38.9, San Lorenzo. . . . 3.08
- Lagunillas Heavy, flat, Cardon. . . . 2.25

†*Differential per deg. of grav. varies.*

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura. . . . 2.08
- Safaniya, 27.0-27.9, Ras Tanura. . . . 1.79
- Iran, 34.0-34.9, Bandar Mashur. . . . 2.04
- Iran, 34.0-34.9, Abadan. . . . 1.99
- Iraq, 35.0-35.9, Fao. . . . 1.98
- Kuwait, 31.0-31.9, Mina-al-Ahmadi. . . . 1.85
- Qatar, 41.0-41.9, Umm Said. . . . 2.23
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud. . . . 1.61
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud. . . . 1.43

Middle East, Eastern Mediterranean
- Arabian, 36.0-36.9, Sidon. . . . 2.49
- Iraqi, 36.0-36.9, Tripoli, Banias. . . . 2.49

Far East, Cargoes, FOB Lutong, Sarawak
- Seria Light, 37-38. . . . 2.75

KEY TANKER RATES

(Last pair, per long ton, single voyage)

U.S. Gulf-New York, clean . . (USMC +5%) $2.99†
- U.S. Gulf-New York, dirty. . . . (USMC —10%) $2.56
- NWI-USNH, dirty . . . (USMC —50%) $1.35
- NWI-UK/Cont., dirty. . . . (Scale —57½%) 13/10
- Persian Gulf-UK/Cont., dirty. . . . (Scale —35%) 36/1*
- Persian Gulf-USNH, dirty. . . . (USMC —60%) $5.08

**Sterling.*

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PETROLEUM WEEK REPRESENTATIVES

Atlanta 3 — Douglas C. Billian
1301 Rhodes-Haverty Bldg.
Jackson 3-6951

Boston 6 — Donald R. Thompson
350 Park Square Bldg.
Hubbard 2-7160

Chicago 11 — Edward A. Callahan Jr.
520 North Michigan Avenue
Mohawk 4-5800

Cleveland 15 — J. E. MacArthur
1164 Illuminating Bldg.
55 Public Square
Superior 1-7000

Denver 2 — J. W. Patten
Mile High Center, 1740 Broadway
Alpine 5-2981

Houston 25 — D. O. Hanson
724 Prudential Bldg.
Jackson 6-1281

Los Angeles 17 — Peter S. Carberry
1125 W. Sixth St.
Huntley 2-5450

New York 36 — Donald R. Thompson
500 Fifth Ave.
Oxford 5-5959

Philadelphia 3 — W. A. Potter
6 Penn Center Plaza
Rittenhouse 6-0670

San Francisco 4 — William C. Woolston
68 Post Street
Douglas 2-4600

Tulsa 3 — J. A. Hartley
909 Enterprise Bldg.
522 South Boston
Gibson 7-5594

England, London E. C. 4 — E. E. Schirmer
McGraw-Hill Co., Ltd.
95 Farrington St.

DEPT/Personals

PAUL MILLSAPPS is the new secretary and assistant treasurer of Humble Oil & Refining Co. He replaces **Henry K. Arnold,** who is retiring. Millsapps joined Humble in 1919, and since that time has held various positions in Humble's treasury department. He was named assistant secretary in 1941.

P. Millsapps

B. S. Smith, Jr.

BEN S. SMITH, JR., is filling the newly created post of director of services for Murphy Corp. According to a company statement, the post was created in order to centralize the general service functions performed for the benefit of the parent company and its affiliates. Smith comes to Murphy from Monsanto Chemical Co. with past experience in Lion Oil Co., a division of Monsanto.

J. HOWARD STARK is filling the newly-created post of labor relations advisor for Sunray Mid-Continent Oil Co., Tulsa. He will assist in labor relations work for Sunray Mid-Continent, D-X Sunray Oil Co., and Mid-Continent Pipe Line Co. Stark has prior experience with the U.S. Dept. of Labor, and was a field examiner for the National Labor Relations Board's regional office in Ft. Worth before joining Sunray.

J. C. McCARTHY and **J. W. PHENICIE** have moved up in Pan American Petroleum Corp.'s Rocky Mountain division. McCarthy is now assistant division production superintendent in Casper, Wyo. Phenicie, former assistant division engineer at Houston, replaces McCarthy as Rocky Mountain division engineer.

JOSEPH JACKSON is the new exploration superintendent in Sinclair Oil & Gas Co.'s Denver division. He replaces **C. H. McClure,** who recently moved to Tulsa as assistant manager of the Tulsa division. **George A. Hemenway** replaces Jackson as division geologist at Denver.

R. H. HURD is the new transport manager for Shell Oil Co.'s Houston area. He replaces **A. H. Gardenhire,** who retired recently. Hurd joined Shell in 1939 as a junior engineer in the marketing department. He transferred to the company's exploration and production organization in 1948. His latest position was mechanical engineer in Shell's Corpus Christi (Tex.) division.

R. E. GRISWOLD has been appointed staff geologist of the Texas Co.'s domestic producing department, in New York. Prior to this, Griswold served as assistant division geologist in the Rocky Mountain division, at Denver.

M. BEALESSIO is the new coastal district engineer for Tidewater Oil Co., with headquarters in Ventura, Calif. He formerly held the same position in the San Joaquin Valley district. Bealessio is replaced by **E. Young,** former area petroleum engineer at Bakersfield. **V. Guidera,** former civil engineer at Bakersfield, is now area petroleum engineer for the San Joaquin Valley district.

HORACE W. McGEE has been named as district geologist and supervisor in charge of the East Texas district, at Tyler, Tex., for Pan American Petroleum Corp. He succeeds **L. H. Carroll,** who has been promoted to district exploration superintendent at the Houston district office. McGee started with the company as a geologist scout in 1945.

L. LEON CONINE is the new head of the oil accounting section of Service Pipe Line Co. He replaces **Ora E. Hunter,** who is retiring. Conine formerly was Hunter's assistant. In his new job, he is in charge of records on all oil received and delivered by the company.

T. H. TONNESSEN has been appointed assistant treasurer of Standard Oil Co. (N. J.). He joined Jersey Standard as an economic analyst in 1945. Since that time, he has held various financial assignments, the most recent being manager of the finance division.

WAYNE T. CORLEY, assistant chief engineer of Interstate Oil Pipeline Co., has been named vice-chairman of the transportation committee of the Petroleum Division of the American Society of Mechanical Engineers. His job is to solicit papers for presentation at the Petroleum Mechanical Engineering Conference to be held Sept. 21-24, at Denver.

PENROD DRILLING CO. is moving its headquarters from Shreveport to Dallas this week, according to **Lamar Hunt,** managing partner. The Dallas offices will be located in the Mercantile Securities building. Hunt said the move was being made to centralize the firm's activities. An office will be maintained in Houma, La. to handle south Louisiana and offshore work.

SHERMAN R. STRONG has been named assistant director of employee relations for Texas Eastern Transmission Corp. He will be in charge of employee relations activities for Texas Eastern divisions based in Houston. He formerly was personnel director of Texas Eastern's wholly owned subsidiary, La Gloria Oil & Gas Co.

CARL B. ADAMS has stepped up to director of safety and chief fire marshal of Continental Oil Co., at Ponca City, Okla. Adams, formerly

assistant director of safety, will supervise Conoco's safety program throughout the United States.

WILBERT C. DENNIS will become manager of the Southern region for Lion Oil Co., Division of Monsanto Chemical Co., effective Oct. 1. He replaces **Bert E. Gamble,** who is retiring. Dennis joined the company in 1941 as a geologist; his present position is chief geologist for the company in its production and exploration headquarters at Houston.

J. W. HIGGINS has been appointed senior research geologist, staff, and transferred to the San Francisco office, of California Research Corp., research subsidiary of Standard Oil Co. of California. He formerly was district geologist of Standard's exploration department at Los Angeles.

J. A. HALL, JR., was promoted to division geophysicist, at Midland, Tex., for Sinclair Oil & Gas Co. He succeeds **John B. Etnyre,** who has moved to North Africa with another Sinclair company. Hall has been district geologist at Roswell, N. M.

MAURICE R. GODET has joined Shell Development Co.'s professional staff as an engineer in the lubricants general department, at Emeryville, Calif. He was formerly associated with the Yale University Medical School in an instrumentation design capacity.

WAYNE H. LEE has been appointed geophysical supervisor of Robert H. Ray Co.'s newly-opened office in Bakersfield, Calif. Prior to this assignment, he was Canadian supervisor for the Houston (Tex.) Co.

P. B. Weisz

O. M. Reiff

PAUL B. WEISZ and **ORLAND M. REIFF** have been promoted to the new posts of senior research associate at Socony Mobil Oil Co., Inc., research and development laboratory, Paulsboro, N. J. The announcement was made by **Edward S. Nicholls,** laboratory manager. Reiff is a chemist and Weisz is a physicist.

R. B. SELLARDS has been appointed manager of the new El Dorado (Kan.) district marketing office for American Petrofina, Inc. Sellards was formerly zone supervisor of El Dorado Refining Co., recently acquired by American Petrofina. Three other managers of new district marketing offices are: **Kurvin C. Fish,** Tulsa district; **Gene Austin,** Des Moines (Iowa) district; and **William H. Frank,** Wichita Falls (Tex.) district.

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The advertising rate is $16.75 per inch for Equipment and Business Opportunity advertising appearing on other than a contract business.

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VICE PRESIDENT -SALES-

Large internationally known engineering and construction firm has immediate opening for a vice president who has had at least ten years experience in **SALES NEGOTIATIONS OF PETROLEUM AND CHEMICAL PLANTS.**

We prefer a man with a chemical engineering degree and he should likewise have the ability and past record of dealing with top people throughout the petroleum and chemical industry.

This position will be in Southern California

Our employees know of this ad

Airmail resume to: P-8796 Petroleum Week

1125 W. 6th St., Los Angeles 17, Calif.

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Well established International Drilling Contractor will soon have positions available as Resident Managers of foreign operations for Engineers with extensive field experience in drilling and managerial ability.

Engineers with Toolpushing experience preferred, but will consider Engineers with drilling experience.

Attractive salary and benefits. Training in Domestic Company before foreign assignment.

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POSITION WANTED

Seismologist, 7 years world-wide experience, 4 languages, wants foreign assignment Venezuela or Europe. PW-8771, Petroleum Week.

SPECIAL SERVICE

Alaska: Gubik-Kandik-Kuskokwim-Kateel and Copper River areas. Status reports, leasing maps, filing assistance. Write, wire or call Claudia Fricks, P. O. Box 1222, Fairbanks, Alaska. Phone 3436.

BUSINESS OPPORTUNITY

For drilling deals in Texas, contact Ogden Oil Company, P. O. Box 464, Ph. EL 23353, Taylor, Texas.

WANTED

Anything within reason that is wanted in the field served by Petroleum Week can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

Is Oil Heading for a Relapse?

BARRING AN UNEXPECTED "CRISIS," the oil industry is heading into a bleak fall and winter. And the colder the winter, the bleaker the industry's economic outlook may become.

The problem this time is the imbalance between gasoline and distillate inventories. The positions of the two largest volume products are now just the reverse of what they should be. Unfortunately, the imbalance is of the industry's own making. It cannot be attributed to the result of poor weather conditions which caused less driving during the summer and a lower farm demand. Nor can it be attributed to the general business recession.

The real diagnosis of the industry's poor health is that the sick patient tried to get up and run before his last fever subsided. Just as the industry was well on the road to recovery from a critical attack of oversupply, it abandoned its carefully calculated plans for full recuperation to take advantage of a day in the sun. The "day" came in mid-July when gasoline prices east of the Rockies advanced by varying amounts ranging up to 1¢ a gal.

Since that time, refiners seemingly have tried to drown themselves in a flood of unneeded gasoline.

THE INVENTORY IMBALANCE IS THE WORST IN YEARS. The amount of "carry-over" gasoline on hand is about the same at it was at the start of the two previous fall seasons. But distillate inventories are unusually tight and need to be expanded. And as heating oil demand gradually builds up to its winter peak, the level of refinery operations needed to meet demand most likely will swell the already burdensome gasoline inventories to a dangerously high volume.

Despite the prospects of a stronger distillate price immediately ahead, the industry's over-all economic position could easily deteriorate, bringing heavy pressure on basic price structures—namely crude postings in the field. The crux of the problem is that the economic pattern of refiners is pegged to making its biggest profit on gasoline. However, it makes little sense if the oversupply of gasoline results in increased discount sales.

IT IS STILL NOT TOO LATE for corrective measures to soften the impact of the gasoline oversupply. Refinery runs and gasoline yield should have been trimmed in August, instead of pushed to an 11-month peak near the end of the month.

Adjustments now are urgently needed. The industry can't continue to rely on some crisis, such as the shutdown of the Suez Canal, to bail it out of an unwieldy oversupply position.

The Most Efficient Service Force in the Fields

BJ SERVICE

OIL WELL CEMENTING

ACIDIZING
Each job engineered to assure maximum results.

GEOFRAC
Emulsified acid-in-kerosene fracturing fluid.

AQUAFREE
A service employing the latest techniques in water block removal.

AQUAFRAC
Gelled or ungelled water fracturing service.

SELECT-O-BALL
Selective multiple fracturing technique.

WALL-HOLD
Plastic-coated walnut shell service for sand control.

MUD-SOL
Three distinct mud removal services.

CPN
Emulsion block removal service.

VISQUEEZ
A new and superior method for shutting off water.

OILFRAC
Unemulsified or ungelled sand-oil service.

T-O FRAC
Gelled, or thickened oil, fracturing service.

FORMJEL
Within-formation temporary blocking agent.

MORE THAN EVER in today's competitive and cost-conscious market, *results count!* BJ Service groups work as a team to get these results. Our field men are proven veterans who know local conditions and have the answers when special problems arise. Our equipment—designed and built in our own manufacturing division—is years ahead in performance. Our field stations—more than 50 in all—are fully equipped and staffed to meet local service requirements. You can depend on BJ Service to deliver on the tough jobs as well as the routine runs. Call us for faster, better results!

BJ SERVICE, INC.
A BORG-WARNER SUBSIDIARY

Long Beach, California · Fort Worth, Texas

Stations throughout Mid-Continent, Gulf Coast, Rocky Mountain and California areas

OIL WELL SERVICES
BJ Service
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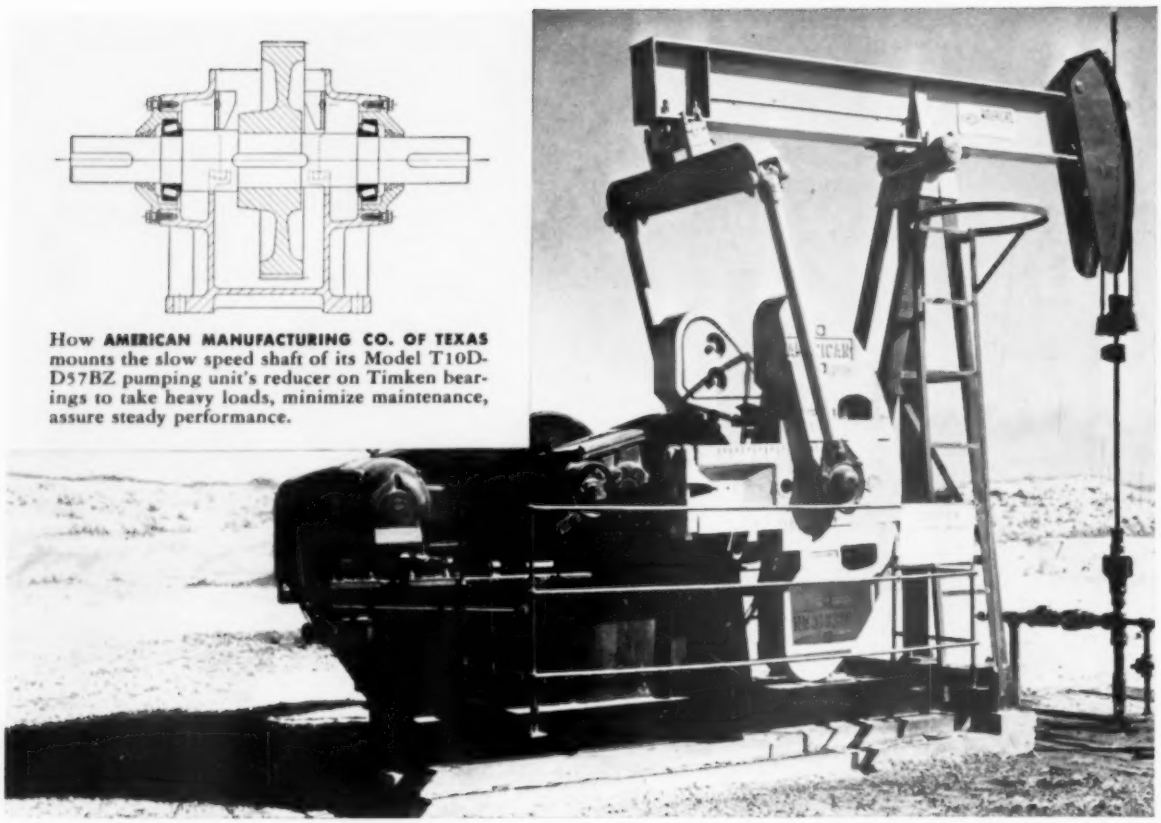
For additional information on these services contact your nearby BJ Service field station.

How **AMERICAN MANUFACTURING CO. OF TEXAS** mounts the slow speed shaft of its Model T10D-D57BZ pumping unit's reducer on Timken bearings to take heavy loads, minimize maintenance, assure steady performance.



TIMKEN® bearings take all the thumps —keep pumping unit maintenance-free

TO make sure its Model T10D-D57BZ pumping unit would run year 'round with little if any attention, American Manufacturing Company of Texas specified Timken® tapered roller bearings for the reducer's slow speed shaft. Because the reducer has herringbone gears, the bearings must fix and position all shafts. And the bearings on the slow speed shaft have to take heavy thumping loads as the pump works.

Timken bearings are case carburized to produce hard, wear-resistant surfaces over tough, shock-resistant cores. Their tapered construction lets them take *both* radial and thrust loads in all combinations. And full-line contact between rollers and races gives Timken bearings *extra* load-carrying capacity. Result is, with Timken bearings there's minimum end play; correct shaft alignment is maintained; gear wear is reduced. Thumps are taken in stride.

And because Timken bearings hold shafts concentric with housings, they make closures more effective. Dirt and moisture can't get in. Lubricant can't get out. Lubrication costs are cut. Maintenance is reduced.

For extra quality control, we even make our own electric furnace fine alloy steel. We're America's only bearing maker that does. To get all these advantages, specify the only bearings that offer them: bearings trade-marked "Timken". The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable: "TIMROSCO".

This symbol on a product means its bearings are the best.

TIMKEN

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